TC-K333ESX/K700ES

SERVICE MANUAL

TC-K333ESX:
E Model

TC-K700ES:
US Model
Canadian Model
AEP Model
G-AEP Model
UK Model

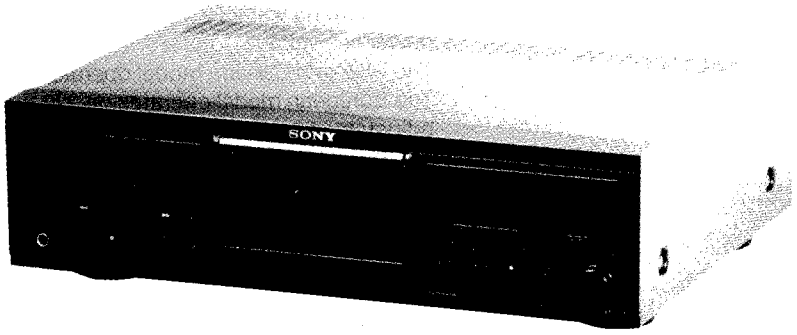


Photo: TC-K333ESX

'Dolby' and the double-D symbol are the trade marks of Dolby laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	TCM-110D2

Recording system 4-track 2-channel stereo
Bias frequency 105 kHz
Heads Erase head × 1 (S & F head)
Record head × 1 (LA head)
Playback head × 1 (LA head)
Motors Capstan motor × 1 (direct drive linear torque BSL motor)
Reel motor × 1 (DC motor)
Wow and flutter ±0.04% W.peak (IEC)
0.025% WRMS
Fast-forward and rewind time
Approx. 90 sec (with C-60 cassette)
Frequency response
Dolby NR OFF
TYPE IV cassette (Sony METAL-ES)
20 – 20,000 Hz ±3 dB (DIN)
20 – 14,000 Hz ±3 dB (0 VU recording level)
15 – 22,000 Hz
TYPE II cassette (Sony UX-S)
20 – 18,000 Hz ±3 dB (DIN)
15 – 19,000 Hz
TYPE I cassette (Sony HF-S)
20 – 17,000 Hz ±3 dB (DIN)
15 – 19,000 Hz
Signal-to-noise ratio (at peak level)

Cassette / Dolby NR system	TYPE I (Sony HF-S)	TYPE II (Sony UX-S)	TYPE IV (Sony METAL-ES)
C-TYPE ON	69 dB	72 dB	73 dB
B-TYPE ON	63 dB	66 dB	67 dB
OFF	56 dB	59 dB	60 dB

Total harmonic distortion
0.8% (with Sony METAL-ES cassette)
Inputs Line inputs (phono jacks)
Sensitivity 77.5 mV
Input impedance 50 k ohms
Outputs Line outputs (phono jacks)
Rated output level 0.44 V (–5 dB) at load impedance 47 k ohms
Minimum load impedance 10 k ohms
Headphones output (stereo phone jack)
Output level continuously variable from 0 – 3 mW (at load impedance 32 ohms)

General

Power requirements
U.S.A. and Canada: 120 V AC, 60 Hz
United Kingdom: 240 V AC, 50 Hz
(220 V AC adjustable by authorized Sony personnel)
European countries: 220 V AC, 50/60 Hz
(240 V AC adjustable by authorized Sony personnel)
Other countries: 120, 220 or 240 V AC adjustable, 50/60 Hz
Power consumption
30 watts
Dimensions Approx. 430 × 125 × 350 mm (W/H/D)
(17 × 5 × 13¾ inches)
Weight Approx. 8.4 kg (18 lb 8 oz)
Supplied accessories
Connecting cord (2)

– Continued on page 2 –

STEREO CASSETTE DECK

SONY®

MICROFILM

AUD

Peak program meters

Display range −40 to +8 dB
Frequency response
20 – 20,000 Hz ±1.5 dB
Attack time 1 ms
Recovery time 750 ms (from 0 to −20 dB)
Number of display segments
16 each for left and right channel

TABLE OF CONTENTS

Section	*Title*	*Page*
	Specifications	1
	Operating Voltage	2
	Model Identification	2
	Safety Check-out (US model)	3
	Features	3
	Location and Function of Controls	5
	Connections	7
1.	**ADJUSTMENTS**	
1-1.	Mechanical Adjustments	8
1-2.	Electrical Adjustments	11
2.	**DIAGRAMS**	
2-1.	Audio Section Mounting Diagram	20
2-2.	Audio Section Schematic Diagram	23
2-3.	System Control Section Mounting Diagram	26
2-4.	System Control Section Schematic Diagram	29
3.	**EXPLODED VIEWS AND PARTS LIST**	33
4.	**ELECTRICAL PARTS LIST**	39
	Troubleshooting	46

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

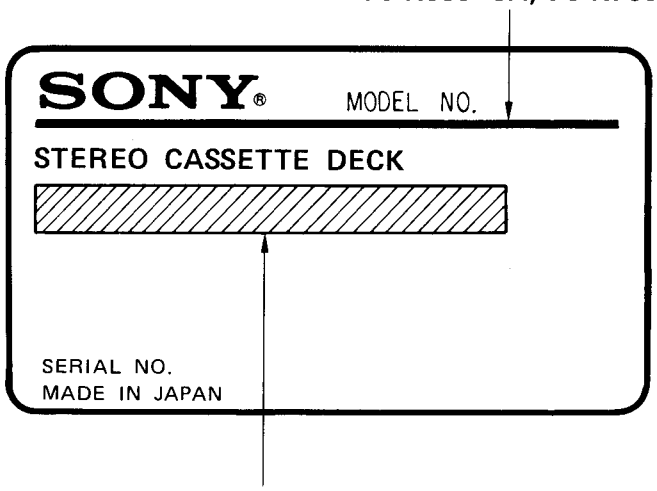
OPERATING VOLTAGE

Before connecting the unit to the power source, check that the operating voltage of your unit is the same as the local power line voltage.
The USA and Canada model operates on 120 V AC.
The European model operates on 220 V AC (or 240 V AC adjustable by authorized Sony personnel).
The United Kingdom model operates on 240 V AC (or 220 V AC adjustable by authorized Sony personnel).
The model for other countries operates on 120, 220 or 240 V AC. The voltage selector is located on the rear panel. If the selector must be reset, **disconnect the AC power cord** and set the selector to the appropriate voltage.

MODEL IDENTIFICATION

– Specification Label –

TC-K333ESX, TC-K700ES



G-AEP, AEP Model: AC: 220 V ~ 50/60 Hz
UK Model: AC: 240 V ~ 50/60 Hz
E Model: AC: 120/220/240 V ~ 50/60 Hz
US Model: AC: 120 V 60 Hz
Canadian Model: AC: 120 V 60 Hz

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

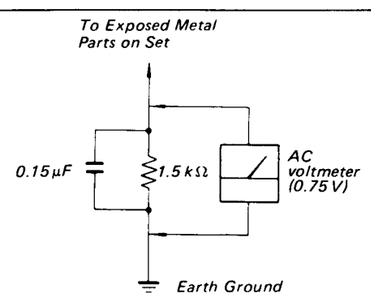


Fig. A. Using an AC voltmeter to check AC leakage.

FEATURES

Calibration brings out the best of every tape
Separate controls permit precise adjustment of recording bias current over a range of ±20% and recording level (sensitivity) over a range of ±3 dB. This assures optimum performance with any kind of tape.

Large multi-function peak program meters
These meters provide accurate level indication and maintain the peak readings for about 2 seconds, for easy recording level setting which makes full use of the tape's dynamic range.

Linear counter shows tape travel time
The electronic tape counter displays the playing time in minutes and seconds. It can also be used to determine the remaining playback or recording time to the end of the tape.

3-head system for instant monitoring
Separate record, playback and erase heads let you instantly check the recorded sound while a recording is in progress. The record and playback heads are made of laser amorphous material, to ensure wide dynamic range, extremely low noise and superior sound quality.

Other convenient functions
- Any specific point on the tape can be stored in memory, to easily locate it later or automatically start playback from there.
- Unattended recording or automatic playback can be carried out with an optional timer.
- Dolby C-type noise reduction system guarantees natural and noise-free sound reproduction.
- Automatic tape slack take-up function prevents tape damage when cassette is inserted.

MEMO

LOCATION AND FUNCTION OF CONTROLS

Cassette holder

⏏ (Eject) button

COUNTER MEMORY button
Press to enter a reference point for the memory play and memory stop function. The indication "MEMORY" appears below the tape counter. Press the button once more to deactivate the function.

Linear tape counter
Indicates the approximate tape running time in minutes and seconds.

COUNTER RESET button
Press to reset the counter to 0.00.

POWER switch
When the unit is turned on, the ▮▮ indicator blinks and the other tape transport buttons are inactive for a few seconds, until all internal circuits have stabilized.

TIMER switch
Permits automatic recording or playback start at a predetermined time with an optional timer.

HEADPHONES jack
(Stereo phone jack)

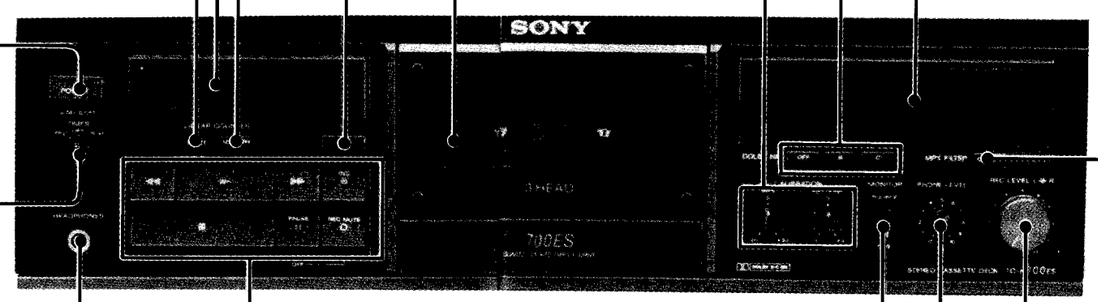
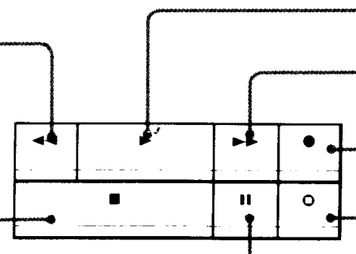


Photo: TC-K700ES

Tape operation buttons



◀◀ (Rewind) button
Press to rewind the tape. When pressed together with ▶, playback automatically starts after rewinding.

▶ (Play) button

▶▶ (Fast-forward) button

● (Record) button

■ (Stop) button

▮▮ (Pause) button
Press to temporarily stop the tape during recording or playback. Press once more to release the pause mode.

○ (Record muting) button
Serves to insert blank spaces between selections during recording. When the button is pressed, a blank of four seconds is created and the tape automatically stops at pause mode.

CALIBRATION controls

DOLBY NR* switches
Press to select the Dolby B-type or C-type NR system. The selected noise reduction type is shown above the peak program meters.

Peak program meters
Show the input level (recording level) when the MONITOR switch is set to SOURCE, and the playback level (recorded level) when the switch is set to TAPE. The tape type is also shown on the meter panel.

MPX FILTER switch
This switch is active only when Dolby B or C noise reduction is selected. Normally, the switch should be set to OFF.
The MPX filter serves to cut off any remnants of the 19-kHz stereo carrier and 38-kHz subcarrier signals, which may otherwise interfere with proper operation of the Dolby noise reduction when recording FM broadcasts. Almost all modern high-performance tuners incorporate filters which adequately remove such signal components from the output. If a tuner with insufficient filtering is used (sound quality degradation is noted when recording with Dolby NR), set the MPX FILTER switch to ON. The indication "FILTER" appears on the meter panel.

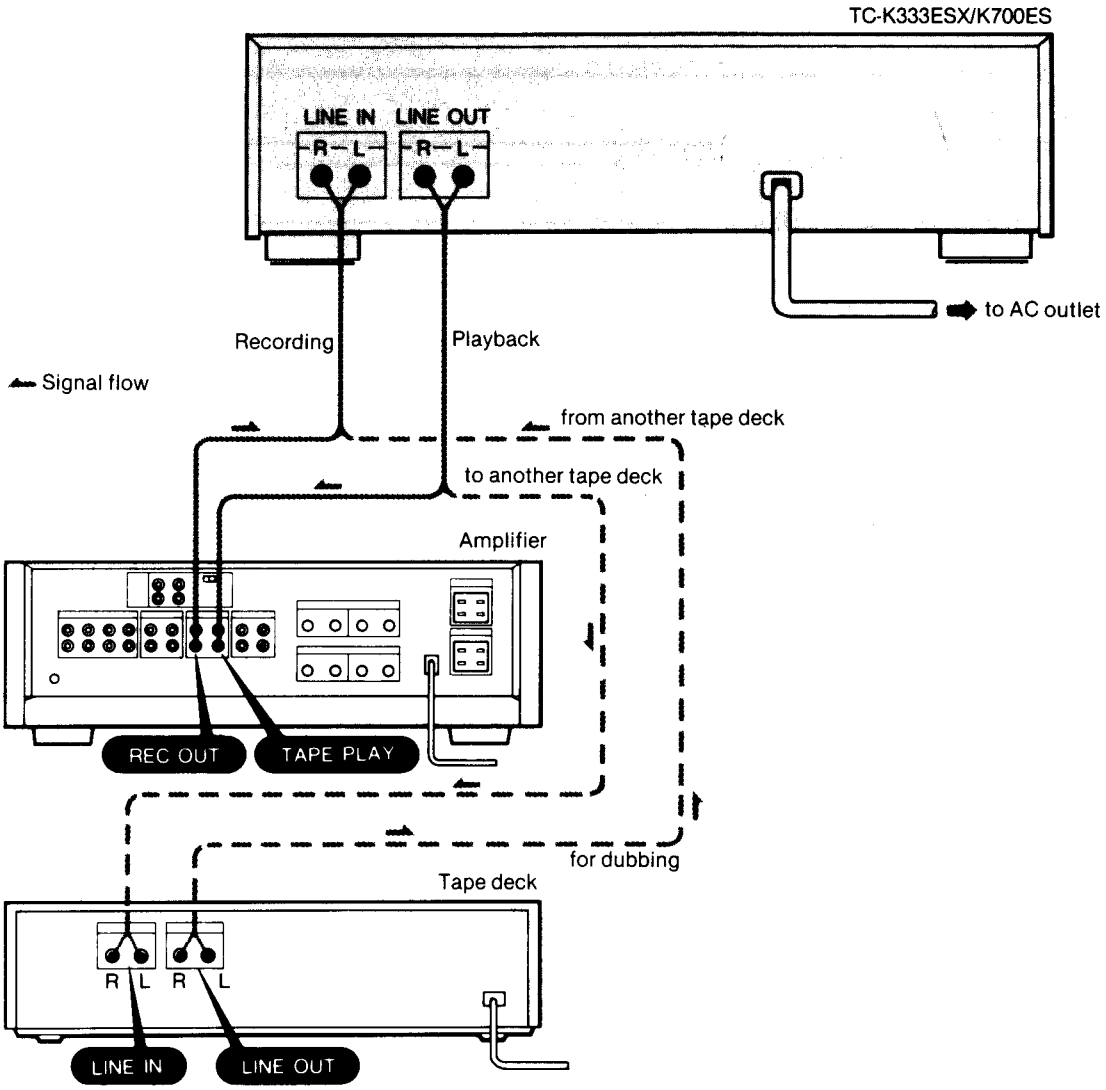
REC LEVEL (recording level) controls

PHONE LEVEL control

MONITOR switch
Set this switch to SOURCE to listen to the input signal and to TAPE to listen to the playback signal from the tape or to monitor the recorded sound during recording. For recording level adjustment, set the switch to SOURCE.

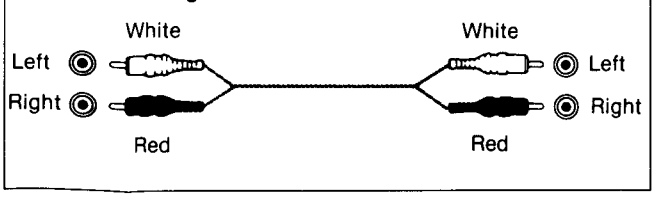
CONNECTIONS

Turn the power to all components off before making any connections.



Use the supplied cables and make connections as shown in the illustration.

Audio connecting cord



Notes on connection

- Note that the red plugs of the supplied connecting cord are for the right channel and the white plugs for the left channel.
- Always insert the plugs fully into the jacks. A loose connection may cause hum pickup.
- Always hold the plug when disconnecting a cable. Do not pull the cord itself.

Power cord

A white mark is visible on one lead of the power cord.
This will help you drive the tape deck and other components in the system "in phase" by matching the AC power cord polarities with AC outlet polarities. In most cases, the marked power cord of the tape deck should be inserted into the negative potential of the AC outlet.

SECTION 1
ADJUSTMENTS

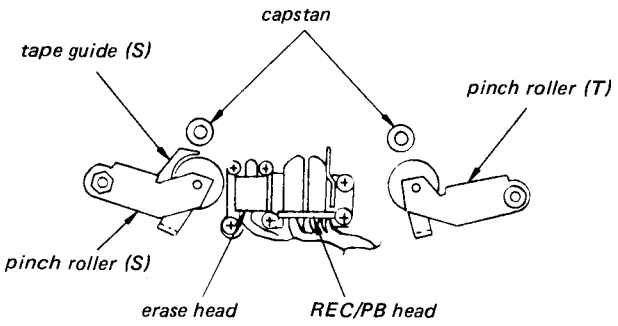
1-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

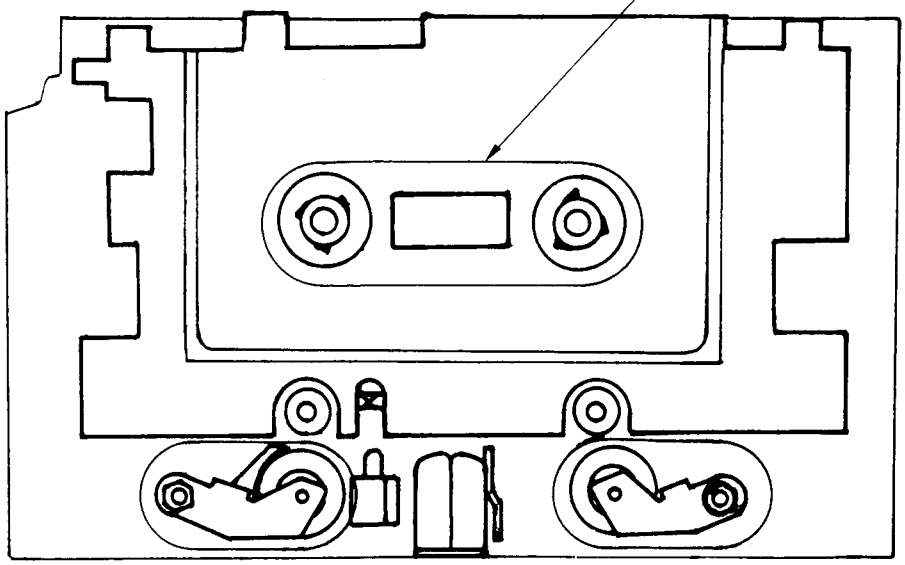
2. Demagnetize the record/playback and erase head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.



FF, REW Torque Check

1. Insert the torque meter CQ201B.
2. Check FF torque when changing the mode STOP → FF.
3. Check REW torque when changing the mode STOP → REW.

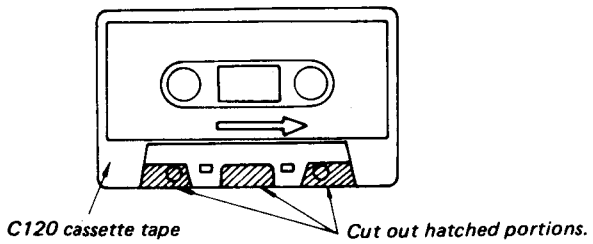
Torque	Torque meter	Reading
FF, REW	CQ201B	60 to 130 g·cm (0.84 to 1.82 oz·inch)



Head Height Adjustment

Insert a mirror cassette or adjustment cassette and adjust screws Ⓐ – Ⓒ so that the tape enters the tape guide of the record/playback head smoothly when pushing the head base out by hand.

1. Make an adjustment cassette as shown below or use a mirror cassette.



2. Insert the mirror cassette (or adjustment cassette) into the set. In FWD mode, the tape should not curl at the portions shown by arrows (tape guides) in Fig. a.
   If it does, adjust the height of tape guide of supply pinch roller.

Adjustment locations:

adjustment screw of tape curl in Fig. b
(Be careful not to turn the screw more than 1/2 turn.)

3. Back tension: 0
   Make sure that there is no tape twist at portions ⓐ – ⓓ .
   1. When the tape twists upwards:
      Turn adjustment screws Ⓑ , Ⓒ of the record/playback head and recline the head as shown in Fig. c.
   2. When the tape twists downwards:
      Turn adjustment screws Ⓑ , Ⓒ and recline the head as shown in Fig. d.
4. Measure the height of erase head.
   If it is out of the range indicated in Fig. e, follow the procedures below.
   1. When the height of erase head is out of the range:
      Adjust the height by screws Ⓓ , Ⓔ , Ⓕ of the erase head.
   2. After adjusting the height of the erase head, make sure that the head is not inclined. If necessary, loosen or tighten adjustment screw Ⓓ .

Fig. a

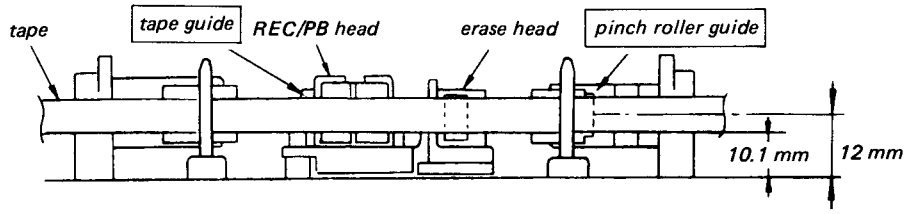
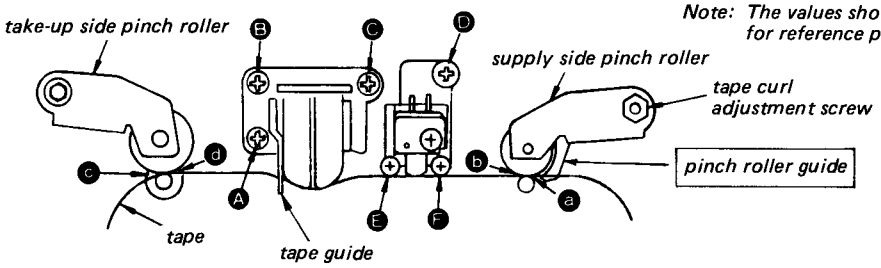


Fig. b



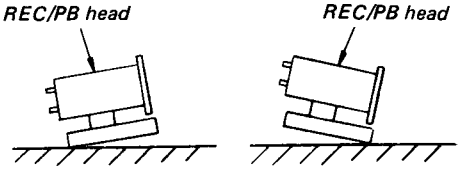


Fig. c

Fig. d

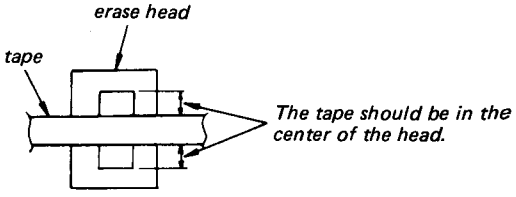
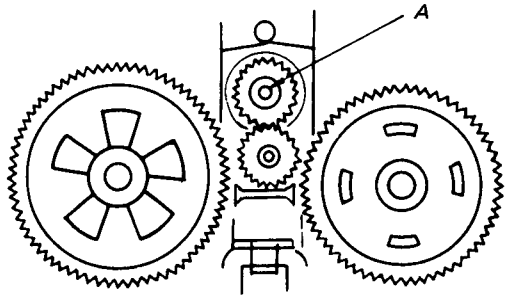


Fig. e

Forward Torque/Back Tension Torque Adjustment

1. Insert the taken-up tape, and set the Forward mode. Adjust RV701 so that the A bigins to rotate.



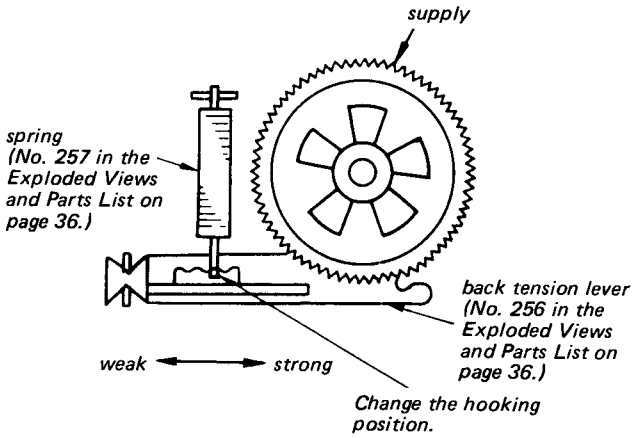
2. Insert the torque meter CQ102C, make sure that the forward torque and the back tension torque meet the specifications.

Specifications

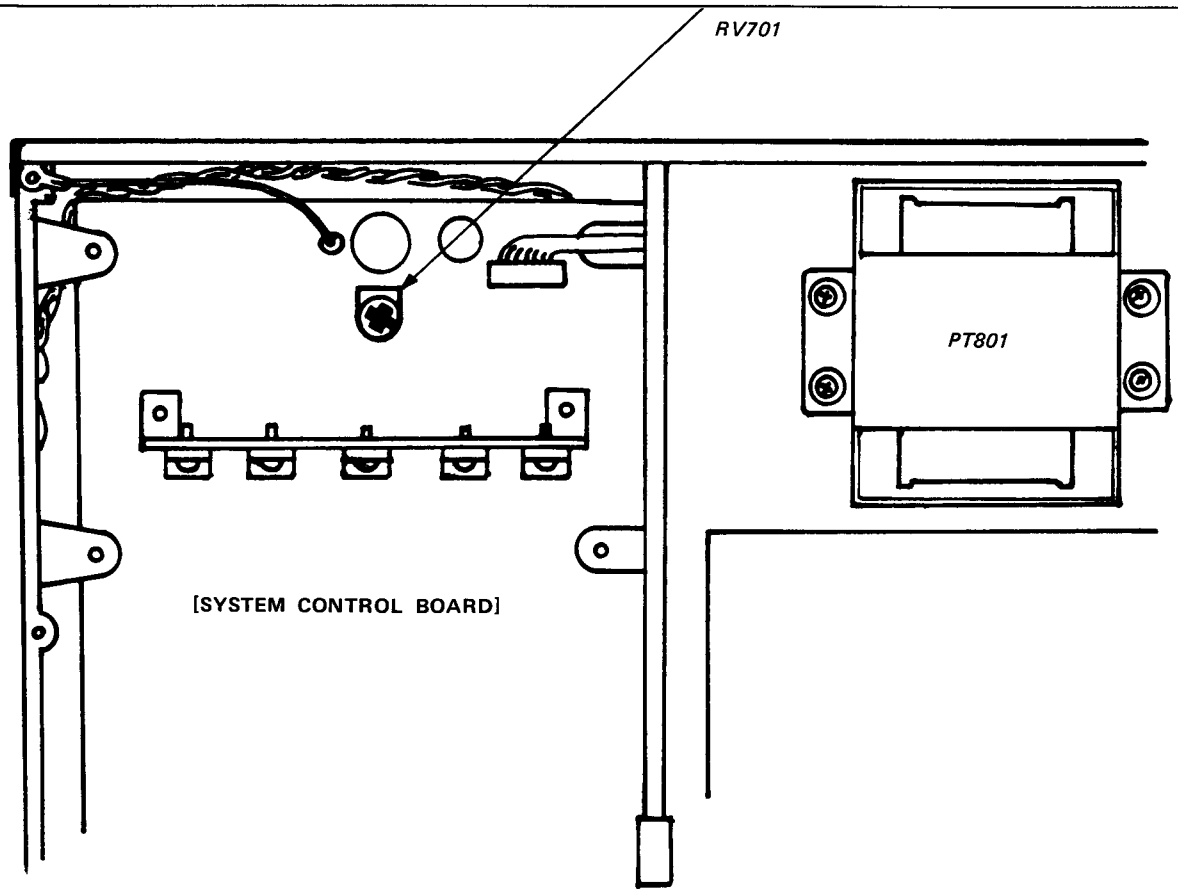
Forward torque: 30 to 60 g·cm
(0.42 to 0.84 oz·inch)

Forward back tension torque:
7 to 10.5 g·cm
(0.1 to 0.15 oz·inch)

3. When the forward back tension torque doesn't meet the specifications, adjust by changing the hooking position of the spring as shown below.


supply
spring
(No. 257 in the Exploded Views and Parts List on page 36.)
back tension lever
(No. 256 in the Exploded Views and Parts List on page 36.)
weak
strong
Change the hooking position.

Adjustment Location: system control board



1-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Simultaneous REC/PB Mode:
  Input the signals to LINE IN terminal and set to REC mode. Set the monitor switch to TAPE, and monitor the recorded signal from LINE OUT terminal.
- Switch Position:
  DOLBY NR . . . . . OFF
  NPX FILTER . . . . . OFF
  TIMER . . . . . OFF
- Standard Record:
  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

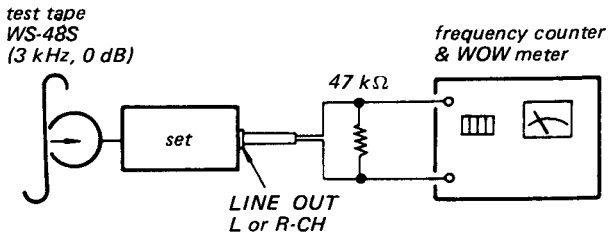
Input Terminal	LINE IN
source impedance	10 kΩ
input level	0.25 V (−10 dB)

Standard Output Level

Output Terminal	LINE OUT
load impedance	47 kΩ
output level	0.44 V (−5 dB)

Tape Speed/WOW Check

Procedure:



1. Measure the output frequency and the WOW value while playing back the tape top of the test tape.
2. Turn over the test tape, measure the output frequency and the WOW value, and check the difference against the values of the step 1.

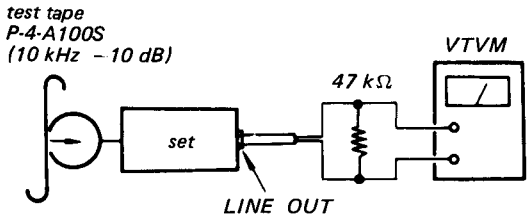
Specification:

TAPE SPEED deviation:	within 2,990 to 3,010 Hz
TAPE SPEED fluctuating width:	within 2,990 to 3,010 Hz
WOW (WRMS):	0.037% below

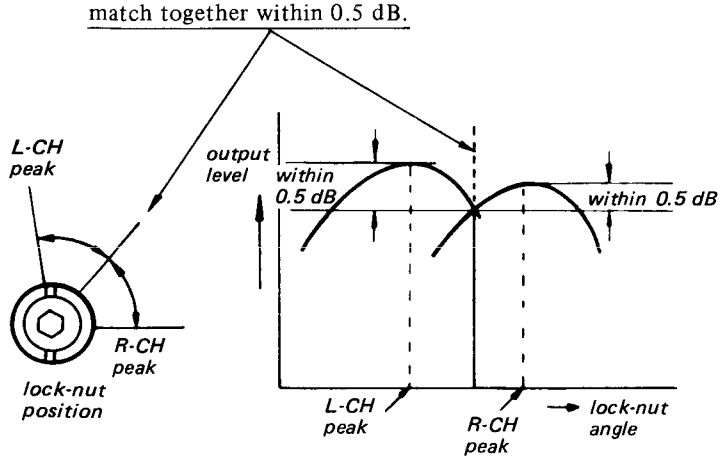
Provisional Playback Head Azimuth Adjustment

Procedure:

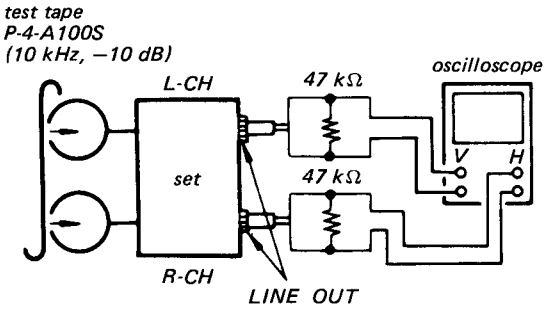
1. Mode: playback



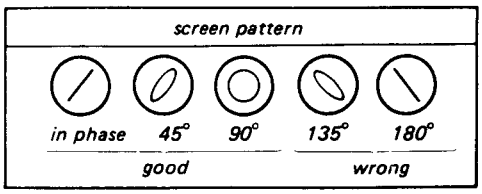
2. Turn the adjustment lock-nut for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



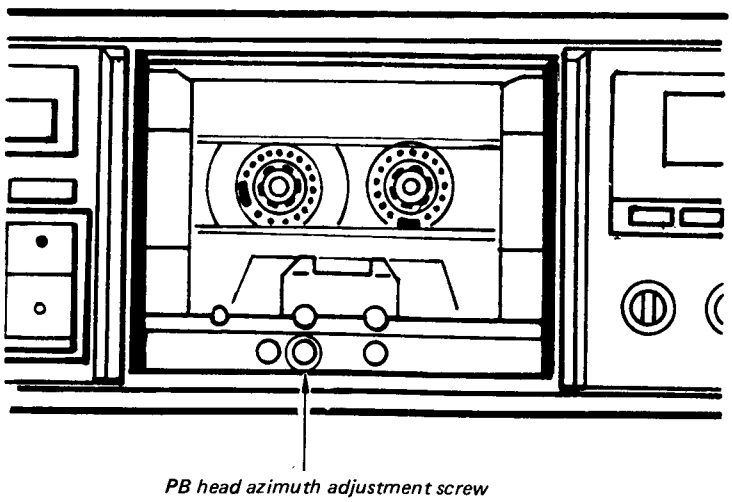
3. Phase check.
   Mode: playback



4. Make sure the phase difference is in between in-phase to 90°.



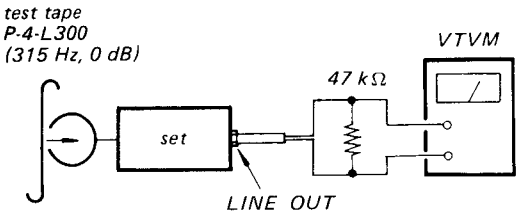
Adjustment Location:



Playback Level Adjustment

Procedure:

Mode: playback



Adjust RV101 (L-CH) and RV201 (R-CH) to obtain the specified LINE OUT level.

Specification:

LINE OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: PB board

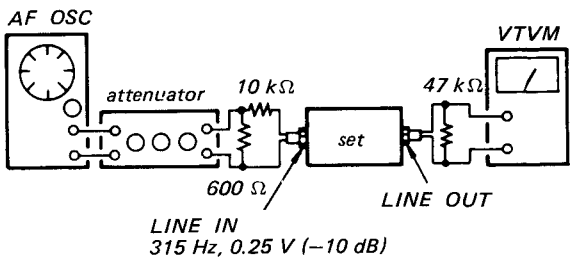
Meter Level Adjustment

Setting:

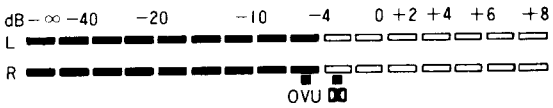
MONITOR switch: SOURCE

Procedure:

1. Stop mode.

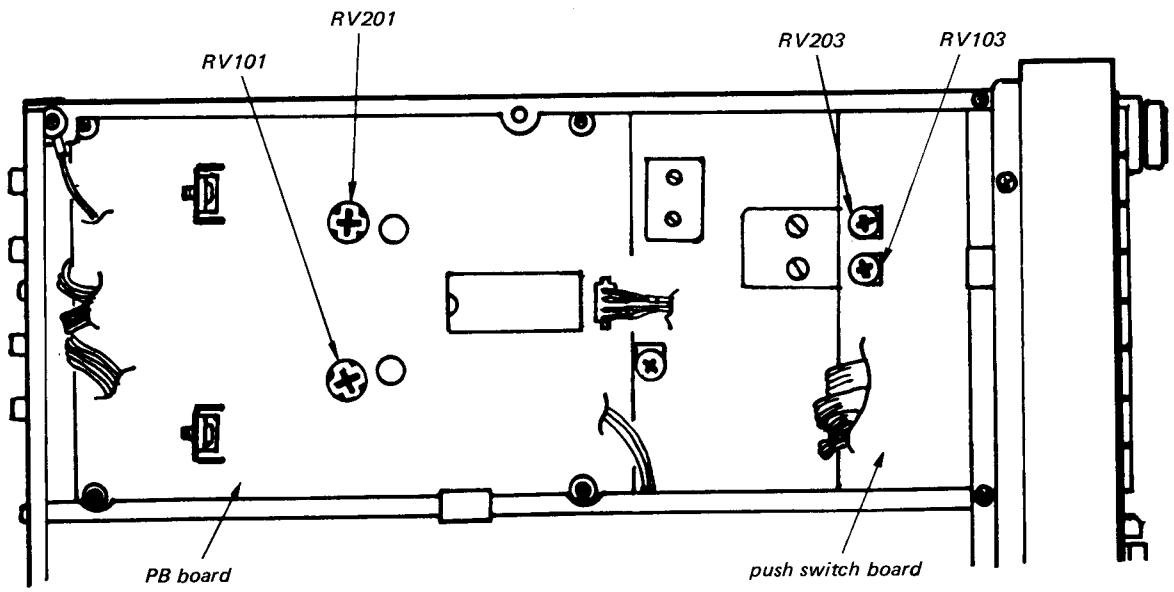


2. Adjust the recording level so that the LINE OUT level is 0.44 V (−5 dB). In this time adjust RV103 (L-CH) and RV203 (R-CH) so that the 0 VU (−4 dB) segments of the meter light-up.



3. Adjust the recording level so that the LINE OUT level is 1.9 V (8 dB). In this time, make sure that all the segments of the meter light-up.

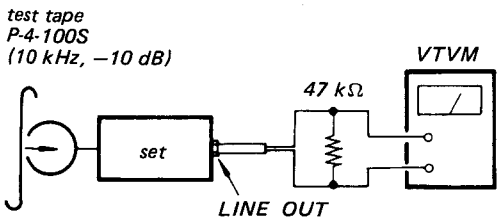
Adjustment Location: push switch board



PB DOLBY NR Check

Procedure:

1. Mode: playback



2. Make sure that the output levels are different in DOLBY NR OFF, B, and C.

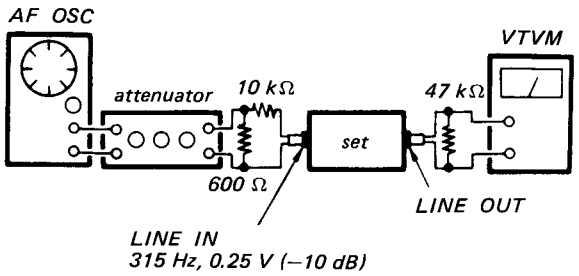
Specification:

OFF ↔ B	level difference	−0.5 to −2.5 dB
B ↔ C	level difference	−0.5 to −2.5 dB

MPX FILTER Check

Procedure:

1. Mode: stop



2. Apply 315 Hz, 0.25 V (−10 dB) signal and adjust REC LEVEL control so that the LINE OUT level is 0.44 V (−5 dB).
3. Apply 19 kHz, 0.25 V (−10 dB) signal and measure the LINE OUT level.

Specification:

DOLBY NR: OFF, FILTER: ON/OFF
0.49 to 0.39 V (−4 to −6 dB)
DOLBY NR: B, C, FILTER: ON
0.25 V (−30 dB) or less

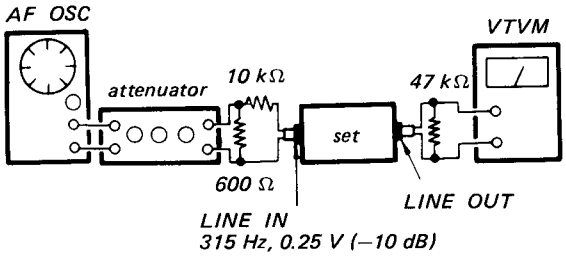
Provisional Record Head Azimuth Adjustment

Setting:

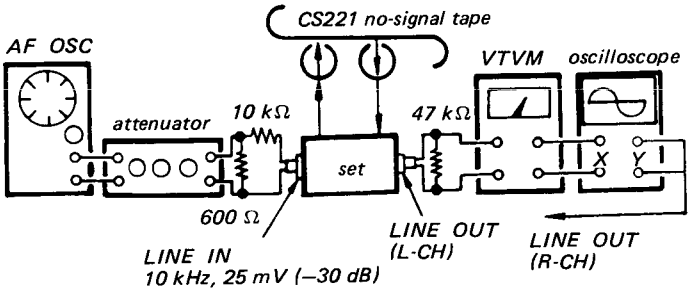
BIAS CAL control: center click

Turn CT301 (L-CH, R-CH) fully clockwise and counterclockwise 1/2 to 1 time. (See Record Bias Adjustment on page 17.)

Procedure:

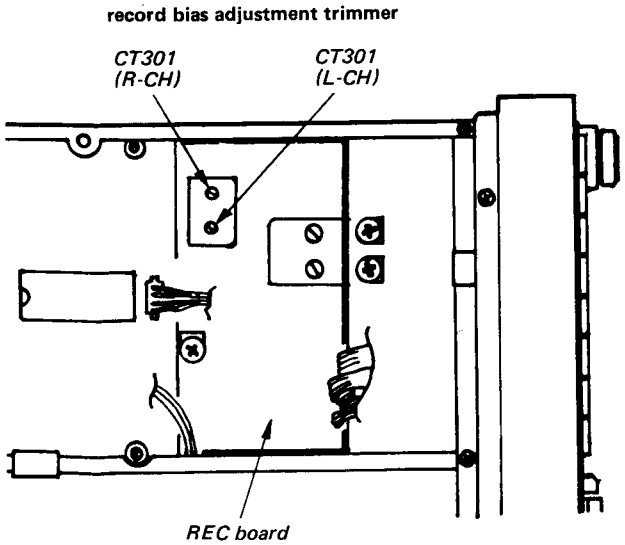


1. Apply 315 Hz, 0.25 V (–10 dB) signal and adjust REC LEVEL control so taht the LINE OUT level is 0.44 V (–5 dB).

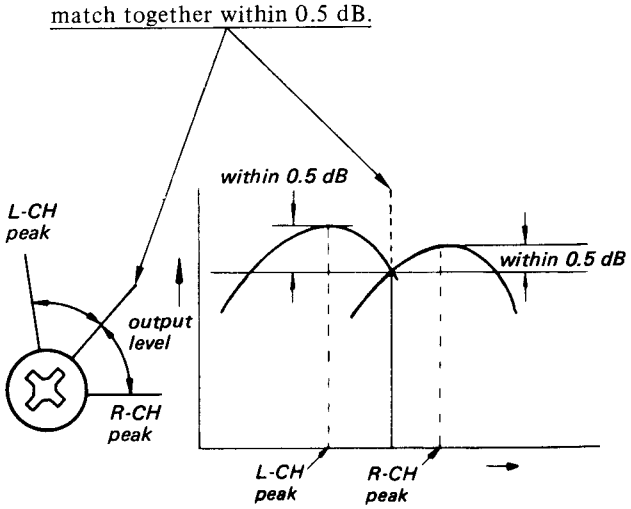


2. Apply 10 kHz, 25 mV (–30 dB) signal, set to the simultaneous REC/PB mode.

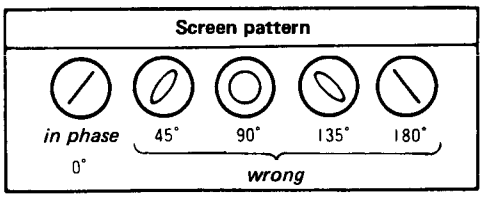
Adjustment Location: REC board



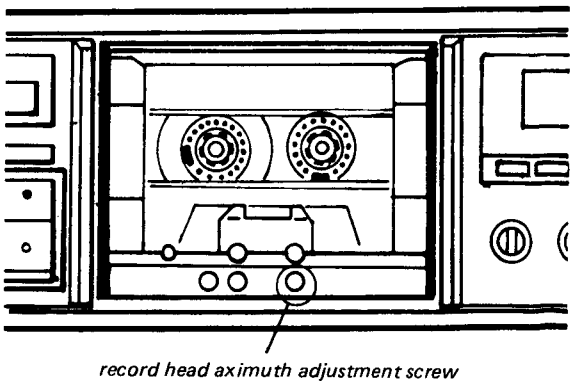
3. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



4. Simultaneously, adjust the azimuth screw so that the phase difference between L-CH and R-CH is 0°.



Adjustment Location: head



Bias Osc Frequency and Bias Trap Adjustment

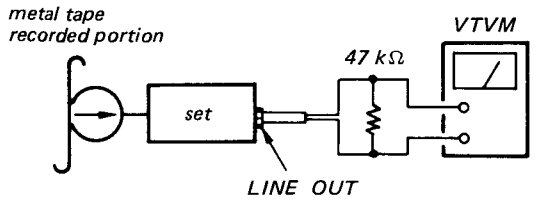
Setting:

Metal Tape (TYPE IV)
LINE IN: no signal
REC LEVEL knob: standard record position
(See page 11.)

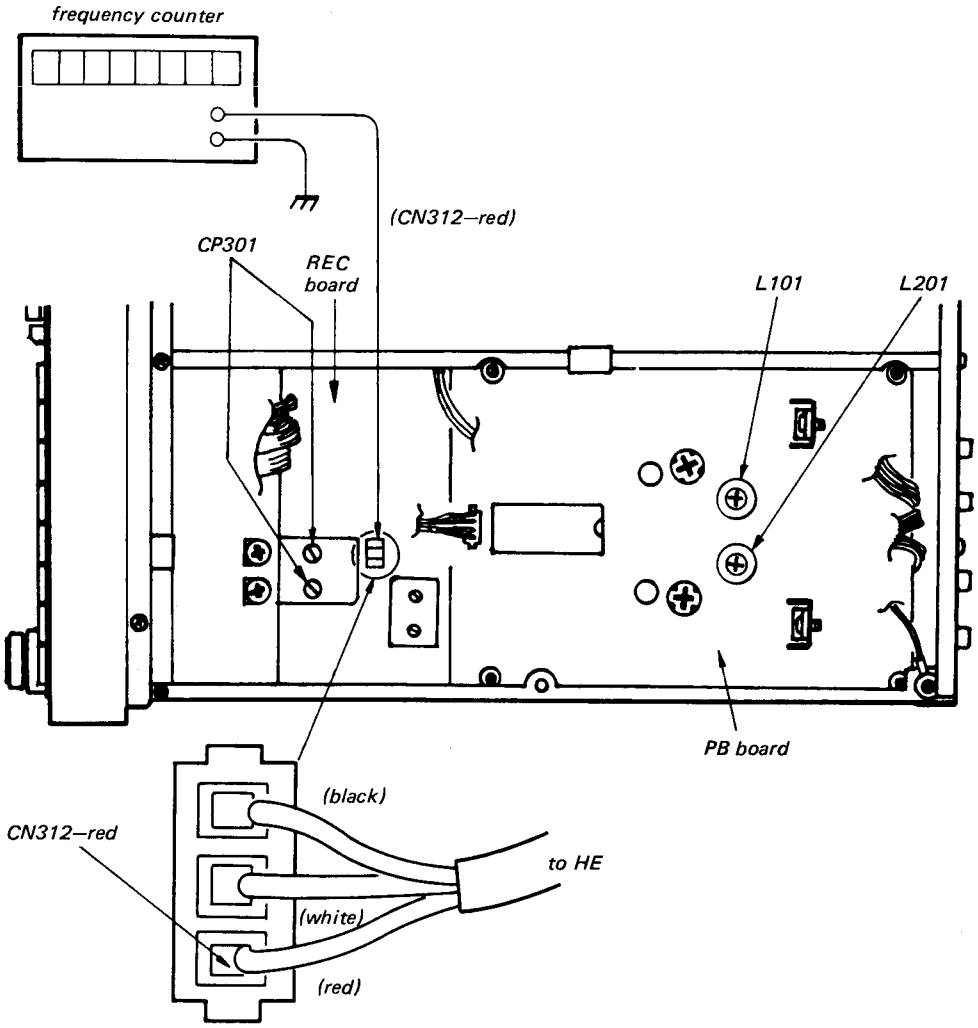
- **Bias Osc Frequency**

Procedure:

1. Mode: record



2. Connect the frequency counter lead, to the erase head connecting terminal. Adjust CP301 so that the reading on the frequency counter is 105 kHz (within 104 to 106 kHz).



- **Bias Trap**

Procedure:

Set the MONITOR switch to TAPE, and adjust L101 and L201 so that the reading on VTVM connected to LINE OUT is minimum.

Specification:

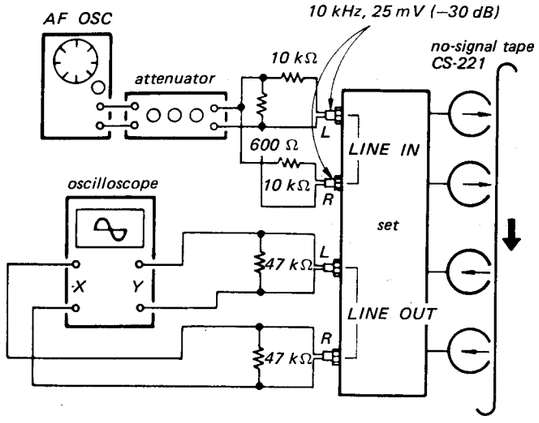
2.75 mV or below (–49 dB or less)

Adjustment Location: PB board, REC board

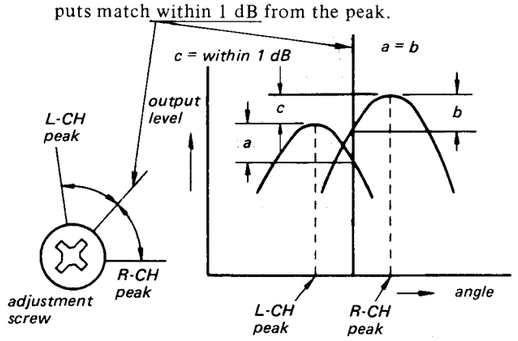
Record Head Azimuth Adjustment

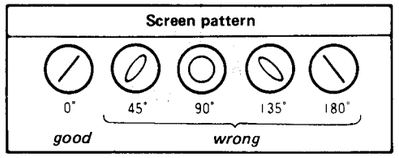
Setting:
REC LEVEL knob: standard record position
(See page 11.)

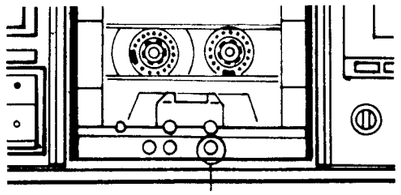
Procedure:
1. Mode: simultaneous REC/PB



2. Adjust the record head azimuth adjustment screw so that the phase difference is 0° (the difference between L-CH and R-CH is within 5°), and outputs match within 1 dB from the peak.





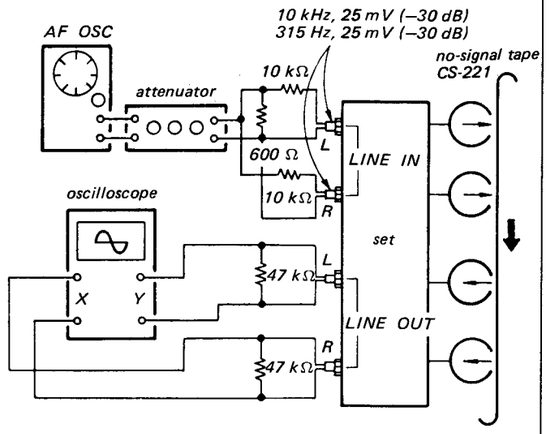


record head azimuth adjustment screw

Record Bias Adjustment

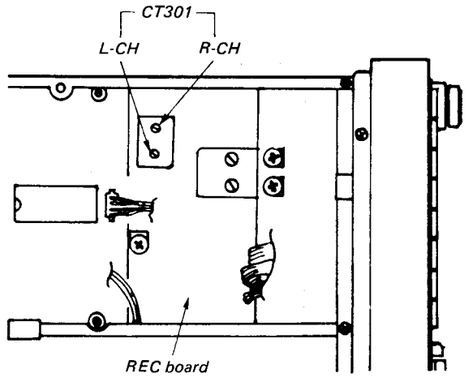
Setting:
REC LEVEL knob: standard record position
(See page 11.)

Procedure:
1. Mode: simultaneous REC/PB

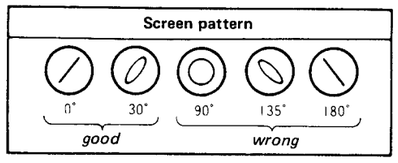


2. Adjust CT301 (L-CH, R-CH) to obtain the same playback level at 315 Hz and 10 kHz.

Adjustment Location: REC board



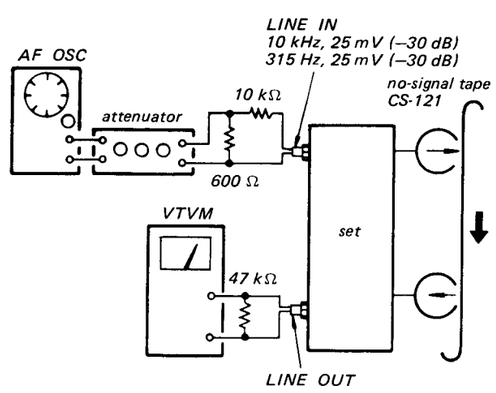
3. After the adjustment, confirm the phase at 10 kHz is 0° (the difference between L-CH and R-CH is within 30°). Repeat the record head azimuth adjustment and the record bias adjustment satisfy the specification again.



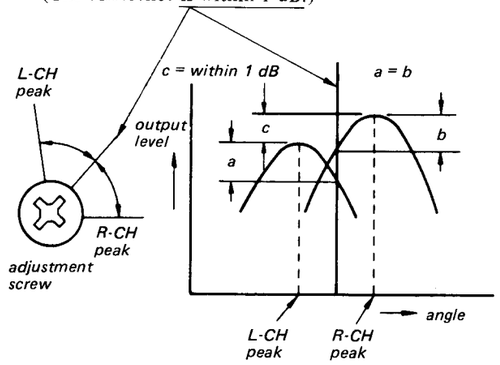
Normal Bias Adjustment

Setting:
REC LEVEL knob: standard record position
(See page 11.)

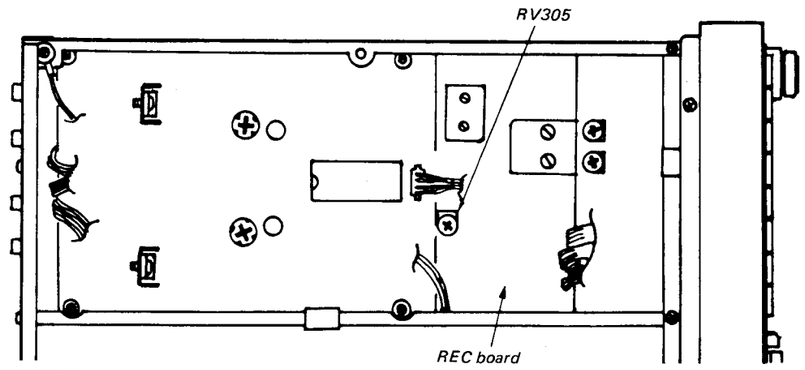
Procedure:
1. Mode: simultaneous REC/PB



2. Adjust RV305 to obtain the same playback level at 315 Hz and 10 kHz.
(The difference is within 1 dB.)

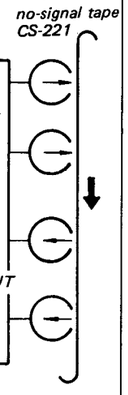


Adjustment Location: REC board



on

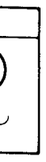
30 dB)
30 dB)



IT

he same

10 kHz
R-CH is
azimuth
satisfy



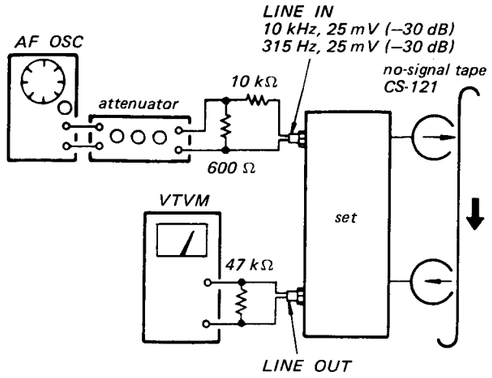
Normal Bias Adjustment

Setting:

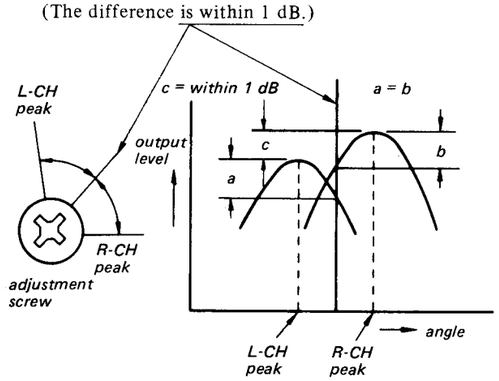
REC LEVEL knob: standard record position
(See page 11.)

Procedure:

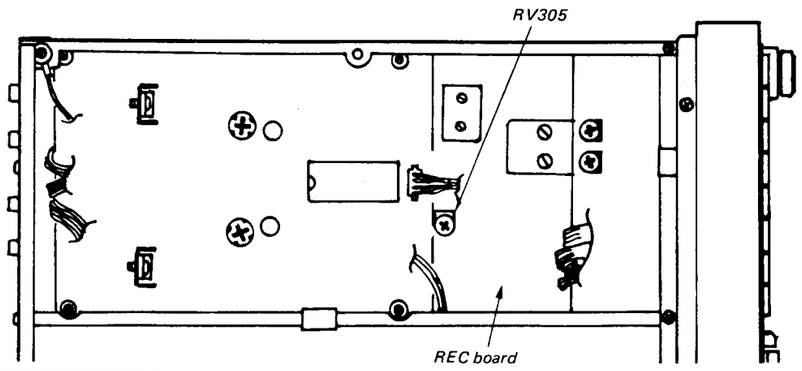
1. Mode: simultaneous REC/PB



2. Adjust RV305 to obtain the same playback level at 315 Hz and 10 kHz.
(The difference is within 1 dB.)



Adjustment Location: REC board



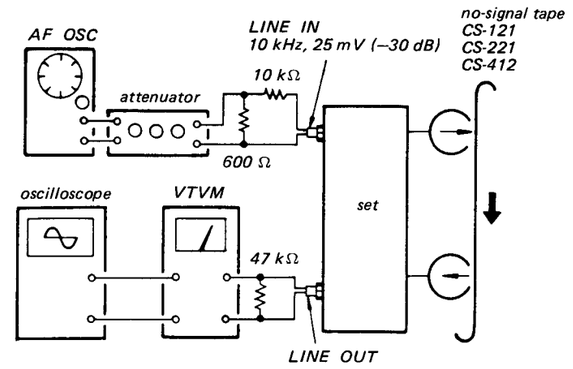
Record Level Adjustment

Setting:

REC LEVEL knob: standard record position
(See page 11.)

Procedure:

1. Mode: simultaneous REC/PB

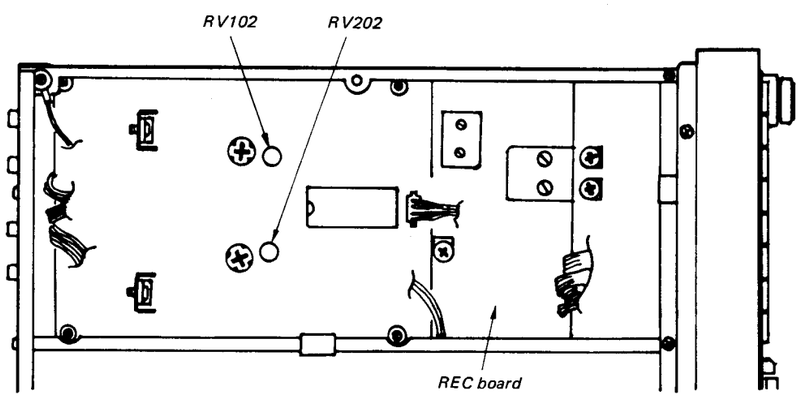


2. Adjust RV102 (L-CH) and RV202 (R-CH) to satisfy the specification.

Specification:

Tape CS-221	within 0.41 to 0.46 V (within –5.5 to –4.5 dB)
Tape CS-121, 412	within 0.39 to 0.49 V (within –6 to –4 dB)

Adjustment Location: REC board



TC-K333ESX/K700ES TC-K333ES

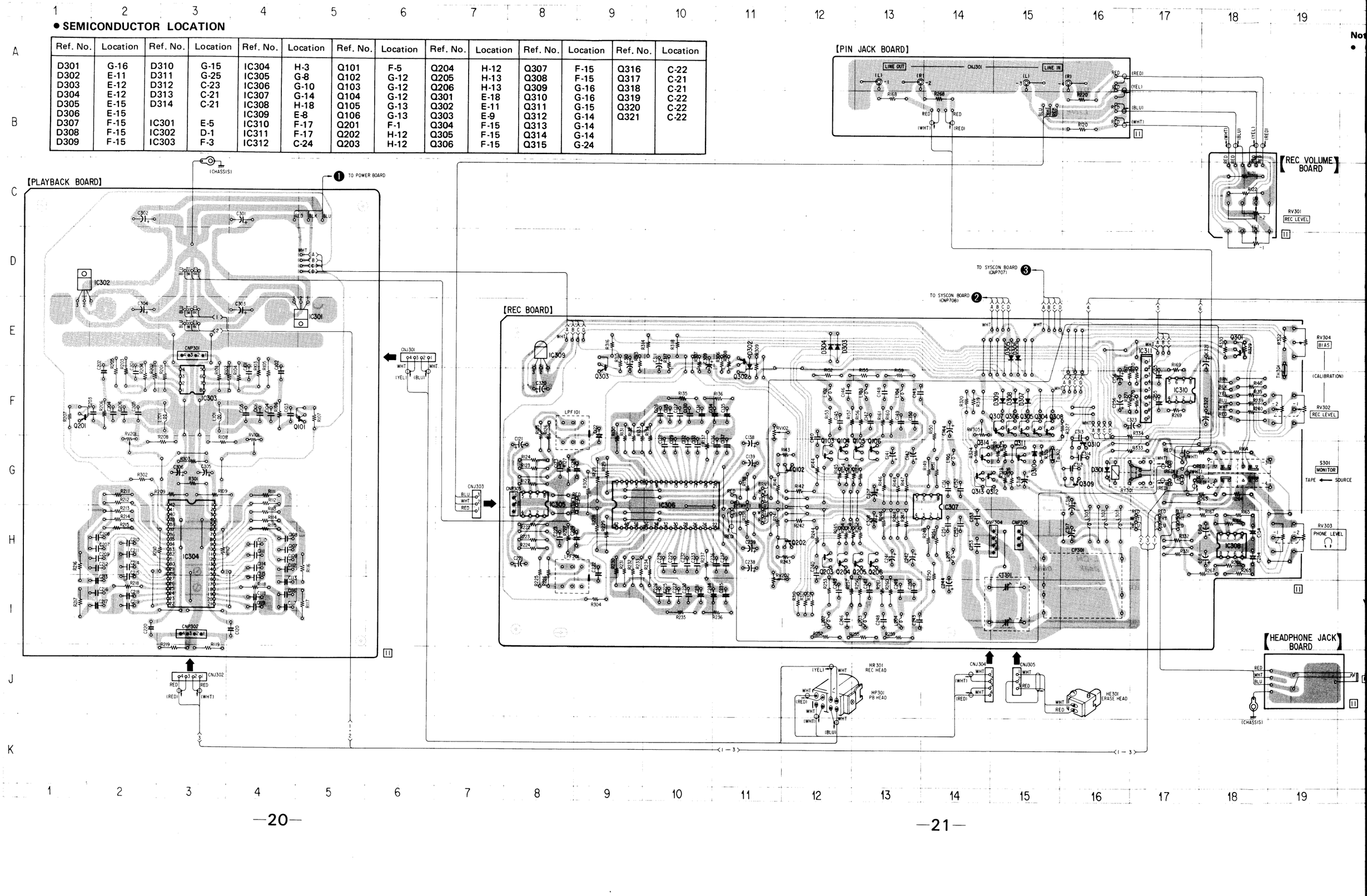
SECTION 2
DIAGRAMS

2-1. AUDIO SECTION MOUNTING DIAGRAM

• See page 32 for Semiconductor Lead Layouts.

• **SEMICONDUCTOR LOCATION**

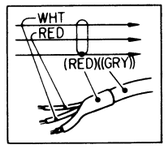
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D301	G-16	D310	G-15	IC304	H-3	Q101	F-5	Q204	H-12	Q307	F-15	Q316	C-22
D302	E-11	D311	G-25	IC305	G-8	Q102	G-12	Q205	H-13	Q308	F-15	Q317	C-21
D303	E-12	D312	C-23	IC306	G-10	Q103	G-12	Q206	H-13	Q309	G-16	Q318	C-21
D304	E-12	D313	C-21	IC307	G-14	Q104	G-12	Q301	E-18	Q310	G-16	Q319	C-22
D305	E-15	D314	C-21	IC308	H-18	Q105	G-13	Q302	E-11	Q311	G-15	Q320	C-22
D306	E-15			IC309	E-8	Q106	G-13	Q303	E-9	Q312	G-14	Q321	C-22
D307	F-15	IC301	E-5	IC310	F-17	Q201	F-1	Q304	F-15	Q313	G-14		
D308	F-15	IC302	D-1	IC311	F-17	Q202	H-12	Q305	F-15	Q314	G-14		
D309	F-15	IC303	F-3	IC312	C-24	Q203	H-12	Q306	F-15	Q315	G-24		



Ref. No.	Location	Ref. No.	Location
Q307	F-15	Q316	C-22
Q308	F-15	Q317	C-21
Q309	G-16	Q318	C-21
Q310	G-16	Q319	C-22
Q311	G-15	Q320	C-22
Q312	G-14	Q321	C-22
Q313	G-14		
Q314	G-14		
Q315	G-24		

Note:

- Color code or sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.

【PIN JACK BOARD】

【REC VOLUME BOARD】

【METER BOARD】

【PUSH SW BOARD】

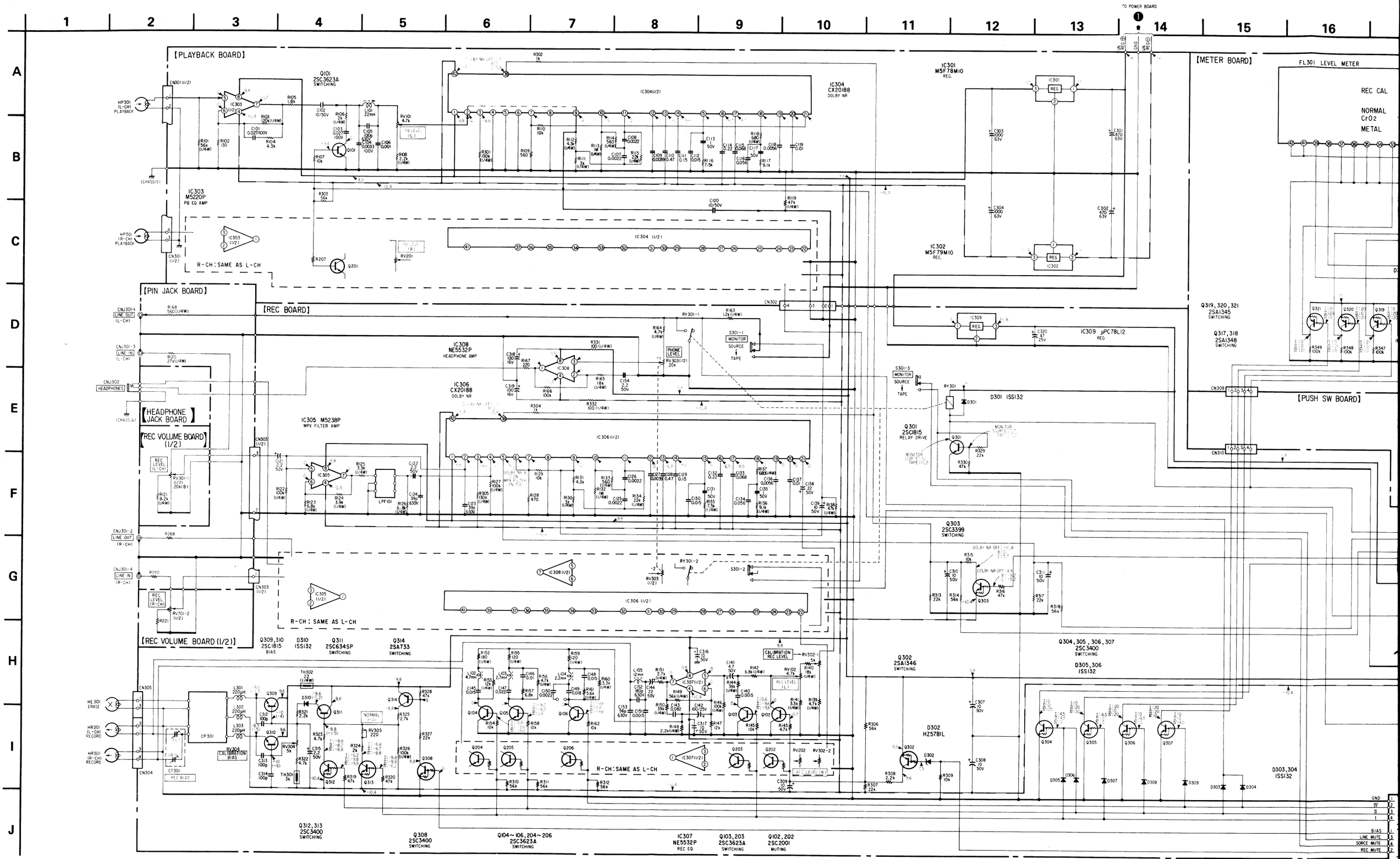
【HEADPHONE JACK BOARD】

TO SYSCON BOARD (CNP707)

TO SYSCON BOARD (CNP708)

TO POWER BOARD

2-2. AUDIO SECTION SCHEMATIC DIAGRAM • See page 32 for notes.



TC-K333ESX/K700ES

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

A B C D E F G H I J

TO POWER BOARD

IC304 CX20188 DOLBY NR

IC301 M5F78M10 REG.

IC302 M5F79M10 REG.

IC309 μPC78L12 REG

IC308

IC306 (1/2)

IC307 NE5532P REC EQ

Q103,203 2SC3623A SWITCHING

Q102,202 2SC2001 MUTING

R-CH : SAME AS L-CH

Q301 2SC1815 RELAY DRIVE

D301 ISS132

Q303 2SC3399 SWITCHING

Q302 2SA1346 SWITCHING

D302 HZ57B1L

Q304,305,306,307 2SC3400 SWITCHING

D305,306 ISS132

D303,304 ISS132

【METER BOARD】

FL301 LEVEL METER

REC CAL HIGH FREQ -dB ∞ 40 30 20 10 4 0 2 4 6 8 dB

NORMAL CrO2 METAL LOW FREQ L R

REC EQ CAL LOW NORM HIGH

OVU

DOLBY NR B C FILTER

IC312 MSL9359RS FLT DRIVER

D314 HZ11C3

D313 HZ11C3

D312 RD5.1JS-B1

Q319,320,321 2SA1345 SWITCHING

Q317,318 2SA1348 SWITCHING

Q316 2SC3399 SWITCHING

【PUSH SW BOARD】

Q315 2SA1345 SWITCHING

D311 RD5.1JS-B1

IC310 M5238P METER BUFFER

IC311 BA6138 METER DRIVE

R-CH : SAME AS L-CH

GND TV B I

TO SYSCON BOARD (CN708)

BIAS LINE MUTE SORCE MUTE REC MUTE

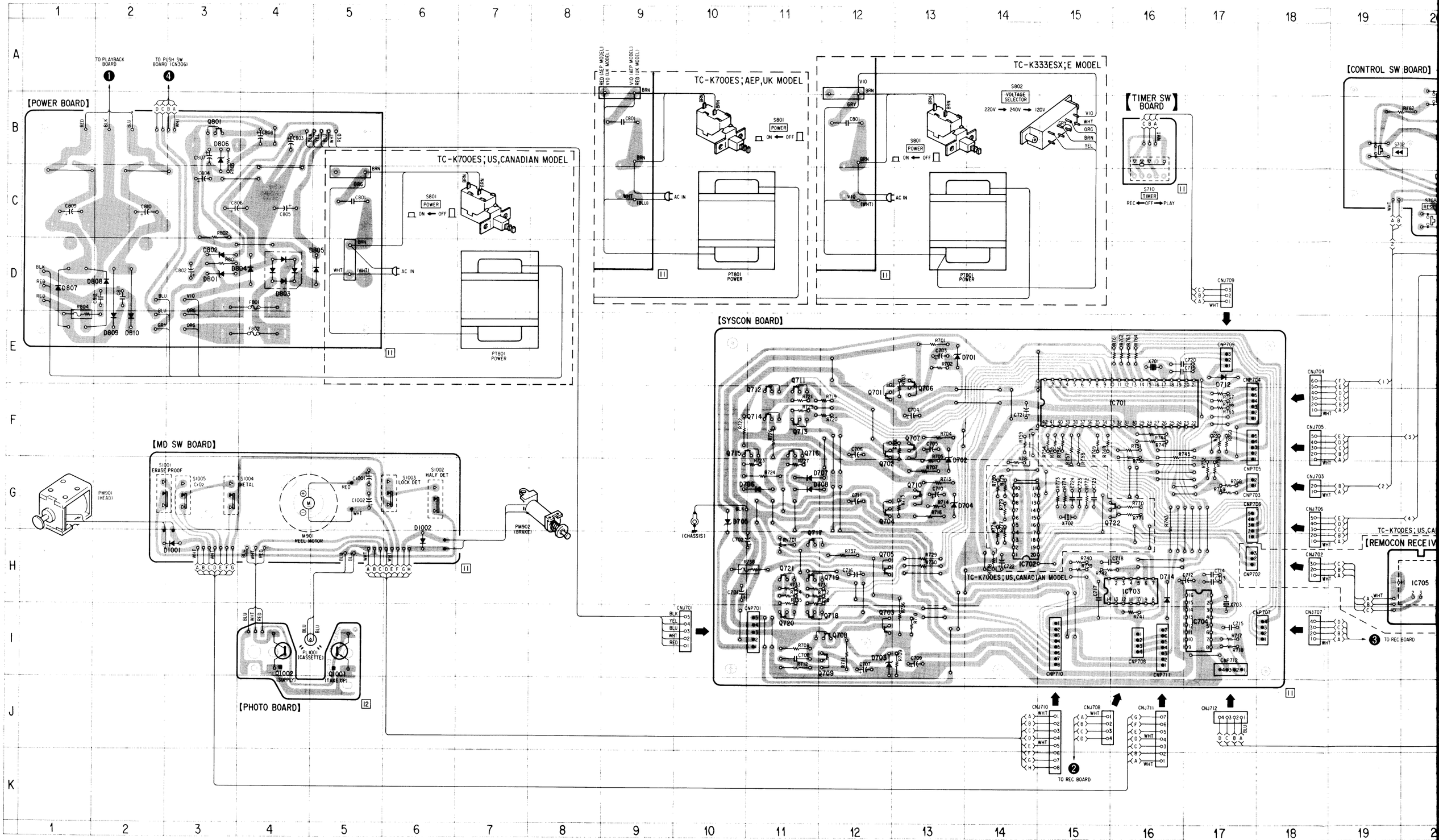
TO SYSCON BOARD (CN707)

TO POWER BOARD

TC-K333ESX/K700ES TC-K333E

2-3. SYSTEM CONTROL SECTION MOUNTING DIAGRAM

• See page 32 for Semiconductor Lead Layouts.



Layouts.

• SEMICONDUCTOR LOCATION

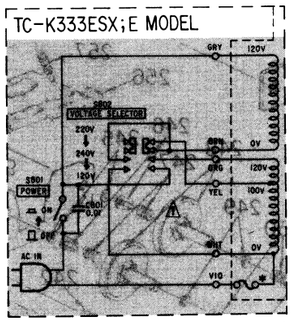
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D701	E-13	D808	D-2	Q707	F-13
D702	G-13	D809	E-2	Q708	I-12
D703	I-12	D810	E-2	Q709	I-12
D704	G-13	D1001	H-3	Q710	G-13
D705	G-10	D1002	H-6	Q711	F-11
D706	G-11			Q712	F-11
D707	G-11	IC701	F-16	Q713	F-11
D708	G-11	IC702	G-14	Q714	F-11
D709	C-20	IC703	H-16	Q715	F-11
D710	C-22	IC704	I-17	Q716	F-11
D711	B-21	IC705	H-20	Q717	H-11
D712	E-17	IC706	F-23	Q718	I-11
D713	E-23	IC901	I-22	Q719	H-11
D714	H-16	IC902	J-23	Q720	I-11
D801	D-3			Q721	H-11
D802	D-3	Q701	F-12	Q722	G-16
D803	D-4	Q702	E-12	Q801	B-3
D804	D-4	Q703	I-12	Q1001	I-5
D805	D-5	Q704	G-12	Q1002	I-4
D806	B-3	Q705	H-12		
D807	D-1	Q706	F-13		

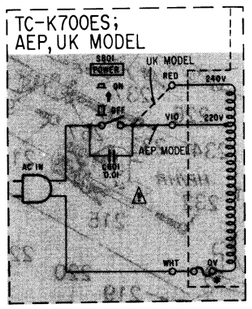
2-4. SYSTEM CONTROL SECTION SCHEMATIC DIAGRAM

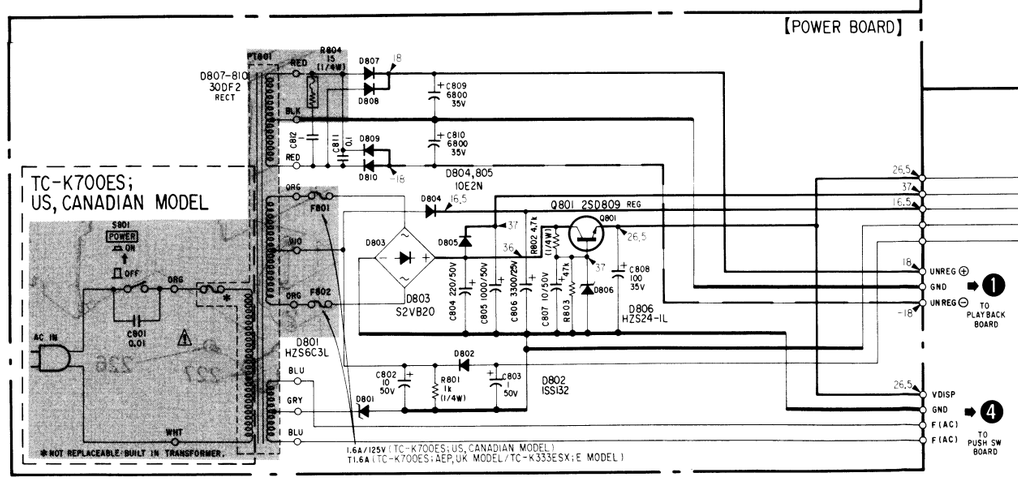
System Control Section Note:

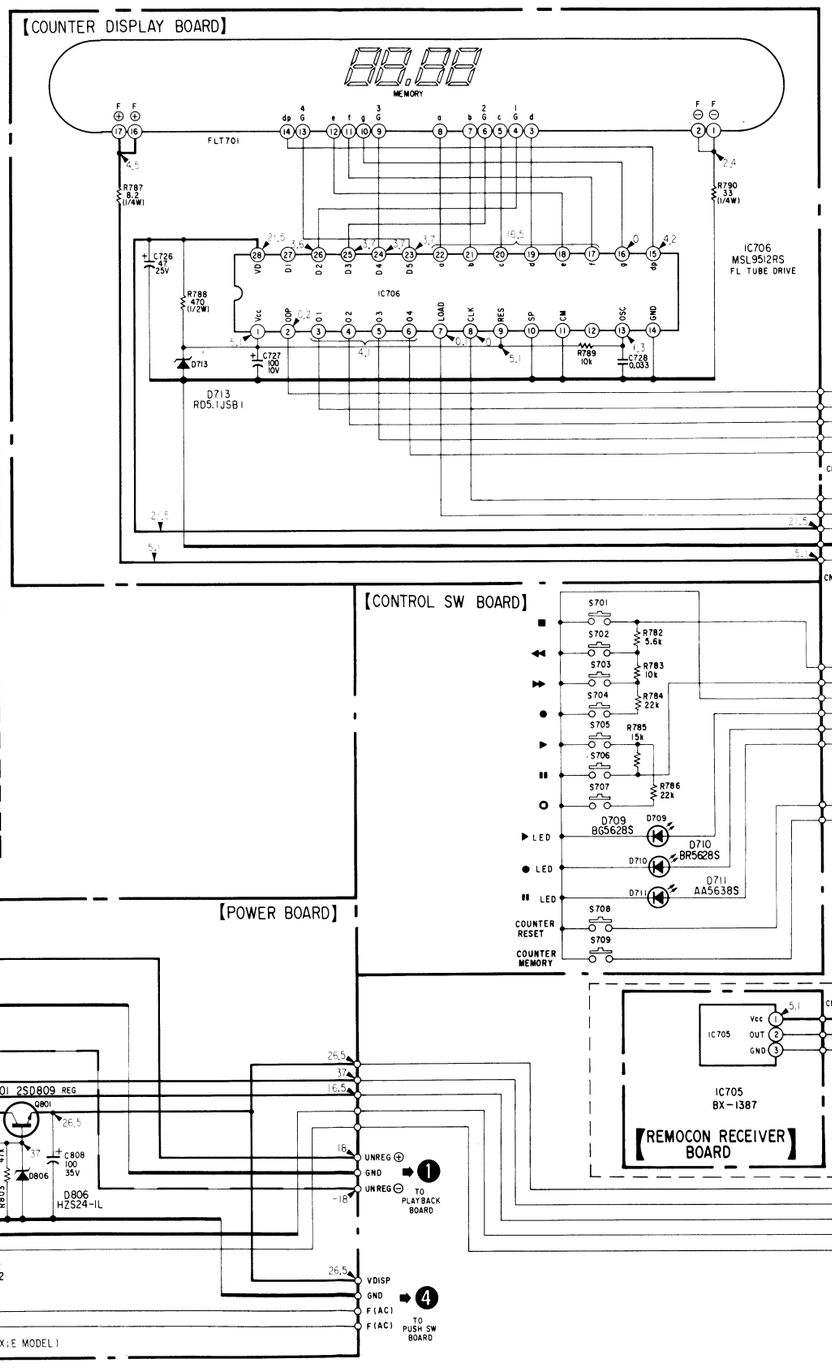
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- : fusible resistor.
- : B+ bus.
- : B− bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
  - ▶ : PLAY
  - ▶▶ : FF
  - ◀◀ : REW
  - ● : REC
  - ❚❚ : PAUSE
- Voltage variations may be noted due to normal production tolerances.
- Switch

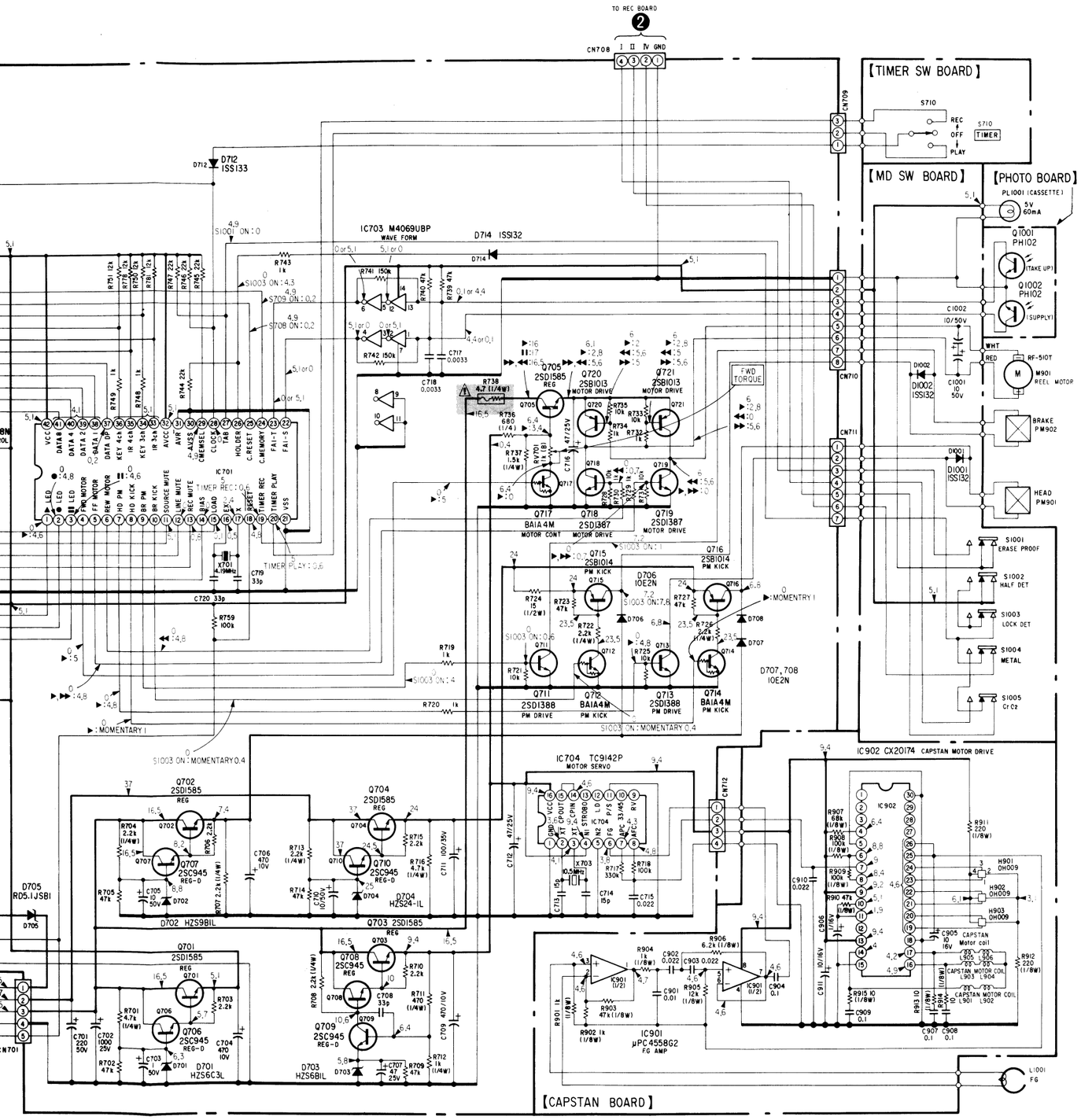
Ref. No.	Switch	Position
S701	STOP	
S702	REW	
S703	FF	
S704	REC	
S705	PLAY	
S706	PAUSE	
S707	REC MUTE	
S708	COUNTER RESET	
S709	COUNTER MEMORY	
S710	TIMER	OFF
S801	POWER	OFF
S802	VOLTAGE SELECTOR (E Model)	120V
S1001	ERASE PREVENTION	OFF
S1002	HALF DET	OFF
S1003	CASSETTE HOLDER LOCK DET	OFF
S1004	METAL	OFF
S1005	CrO_2	OFF











Audio Section Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
  ( ): REC
  I : NORMAL
  II : CrO_2
  IV : METAL
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S301	MONITOR	SOURCE
S303-1	DOLBY NR ON/OFF	OFF
S303-2	DOLBY NR B	OFF
S303-3	DOLBY NR C	OFF
S303-4	MPX FILTER	OFF

- ▬▶ : signal path.

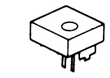
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

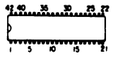
• Semiconductor Lead Layouts

BA6138

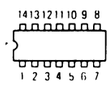
BX-1387



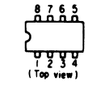
CX20188
MB88517B-228N



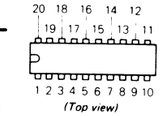
M4069UBP



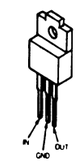
M5220P
M5238P
NJM4560D
μPC4558C



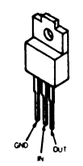
M50761-417P



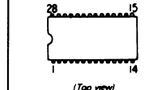
M5F78M10



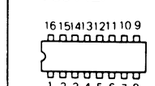
M5F79M10



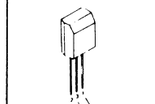
MSL9359RS
MSL9512RS



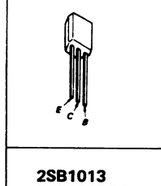
TC9142P



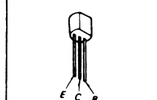
μPC78L12



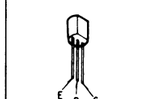
2SA1048-GR
2SA1345
2SA1346
2SC634SP
2SC3399
2SC3400
2SC3402



2SB1013
2SC1815GR
2SC2001
2SD1387
2SD1388

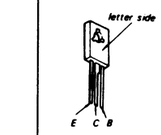


2SB1014

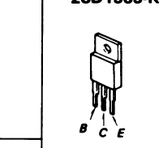


2SC3623A-L

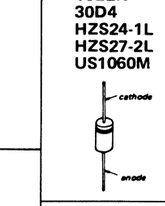
2SD809



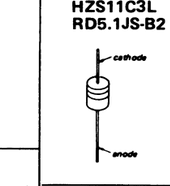
2SD1585-K



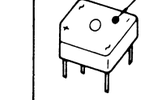
10E2N
30D4
HZS24-1L
HZS27-2L
US1060M



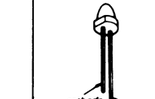
HZS6B1L
HZS7B2L
HZS9B2L
HZS6C3L
HZS11C3L
RD5.1JS-B2



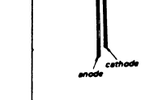
S2VB40



A5638S



BG5628S
BR5628S

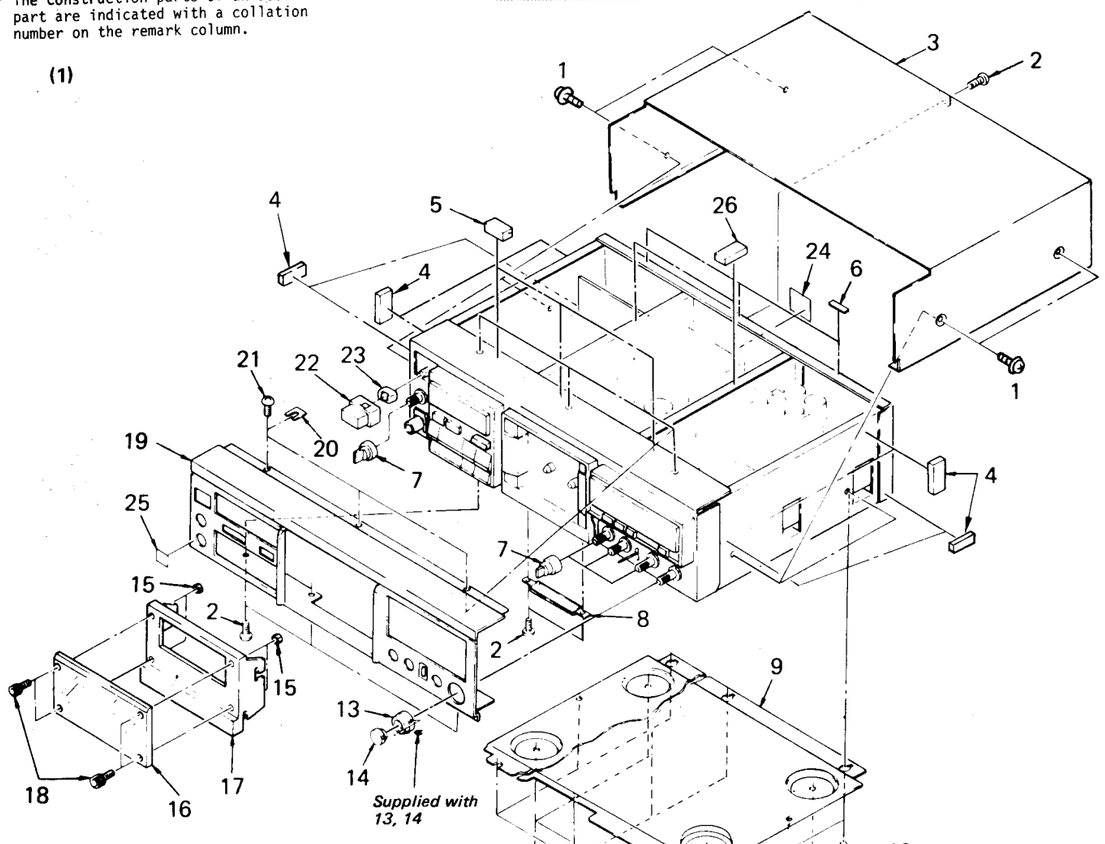


EXPLODED VIEWS AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number on the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

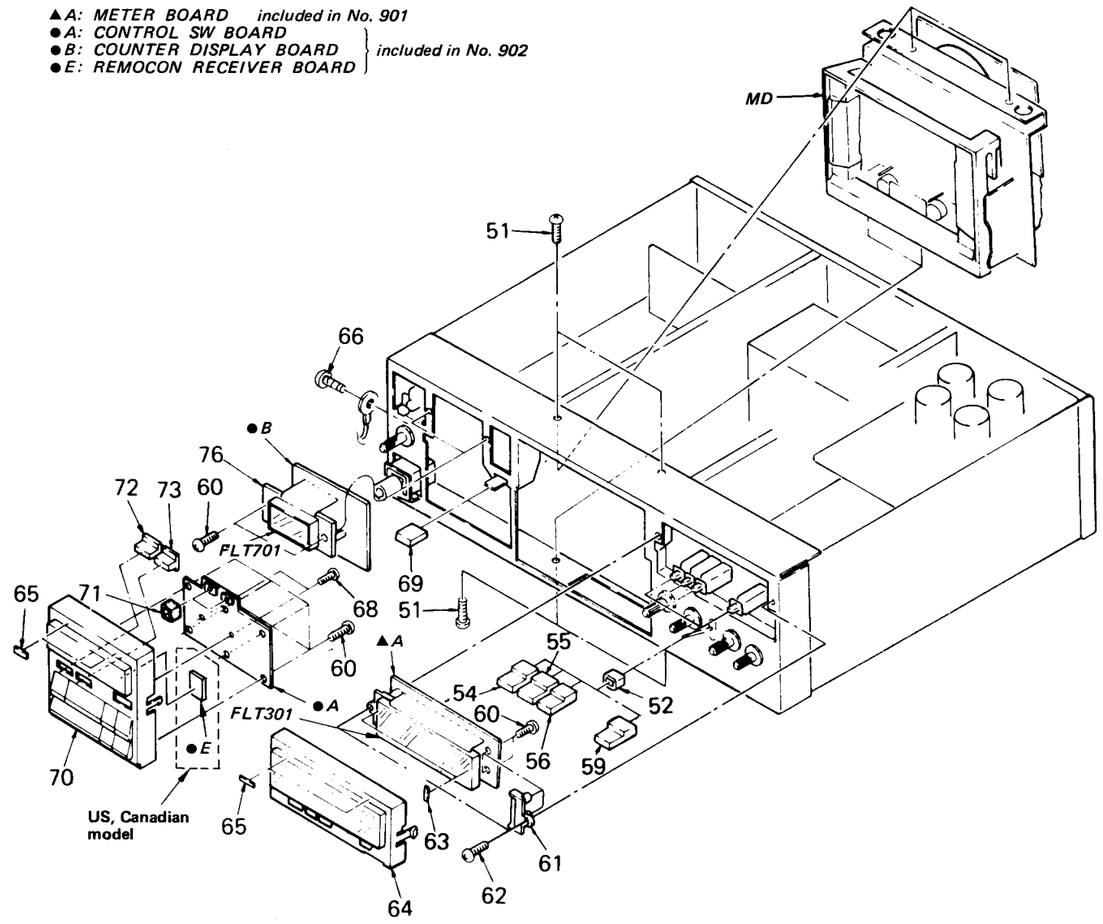
(1)



No.	Part No.	Description	Remarks
1	4-820-330-31	SCREW, BW, PLUS MINUS	
2	3-703-108-21	SCREW +BV 3X6, S TIGHT	
3	3-318-660-01	COVER, TOP	
4	9-911-841-XX	CUSHION	
5	9-911-843-XX	CUSHION, FLYWHEEL	
6	9-911-837-XX	CUSHION (B), FILTER	
7	3-304-929-11	KNOB, HEADPHONE	
8	3-304-962-00	COVER, MD	
9	*3-318-659-01	PLATE, BOTTOM	
10	7-682-148-01	SCREW +BVTT 3X8 (S)	
11	7-682-562-09	SCREW +B 4X10	
12	X-3304-930-1	FOOT ASSY	
13	X-3304-924-1	(US,Canadian)...KNOB (LEFT) ASSY, REC	
14	X-3304-925-1	KNOB (RIGHT) ASSY, REC	
15	7-622-207-05	N 2.6, TYPE 2	
16	3-318-642-01	WINDOW, CASSETTE	
17	3-318-663-11	(E).....LID, CASSETTE	
	3-318-663-21	(US,Canadian,AEP,G-AEP,UK) ....LID, CASSETTE	
18	7-683-412-05	BOLT, HEXAGON SOCKET 2.6X6	
19	X-3304-934-1	(E).....PANEL ASSY, FRONT	
	X-3304-935-1	(US,Canadian,AEP,G-AEP,UK) ...PANEL ASSY, FRONT	
20	3-544-028-21	SPACER	
21	7-682-547-09	SCREW +B 3X6	
22	4-908-046-01	KNOB, SQUARE	
23	*4-864-307-00	RING	
24	*3-318-674-01	(US,Canadian)...LABEL, MODEL NUMBER	
	*3-318-675-01	(AEP,G-AEP).....LABEL, MODEL NUMBER	
	*3-318-676-01	(UK).....LABEL, MODEL NUMBER	
	*3-318-680-01	(E).....LABEL, MODEL NUMBER	
25	3-703-710-41	STICKER, SONY SYMBOL (12)	
26	9-911-843-XX	CUSHION, RUBBER	

(2)

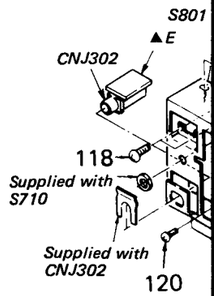
▲A: METER BOARD included in No. 901
●A: CONTROL SW BOARD
●B: COUNTER DISPLAY BOARD } included in No. 902
●E: REMOCON RECEIVER BOARD



No.	Part No.	Description	Remarks
51	7-685-870-09	SCREW +BVTT 3X5 (S)	
52	*4-864-307-00	RING	
54	3-318-652-41	PUSH BUTTON	
55	3-318-652-51	PUSH BUTTON	
56	3-318-652-61	PUSH BUTTON	
59	3-318-652-01	PUSH BUTTON	
60	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
61	*3-318-632-01	BRACKET, METER	
62	7-685-791-09	SCREW +BVTT 2.6X5 (S)	
63	9-911-837-XX	CUSHION (B), FILTER	
64	X-3304-933-1	ESCUTCHEON ASSY, METER	
65	3-553-566-00	CUSHION	
66	7-682-147-01	SCREW +BVTT 3X6 (S)	
68	7-621-772-50	SCREW +B 2X10	
69	3-318-643-01	BUTTON, EJECT	
70	X-3304-927-1	(US,Canadian) ...ESCUTCHEON ASSY, CONTROL BUTTON	
	X-3304-932-1	(AEP,G-AEP,UK,E) ...ESCUTCHEON ASSY, CONTROL BUTTON	
71	*3-311-546-00	CUSHION, SWITCH, MONITOR	
72	3-311-506-01	BUTTON, COUNTER	
73	3-311-506-11	BUTTON, COUNTER	
76	*3-318-651-01	BRACKET, COUNTER	
FLT301	1-519-408-11	INDICATOR TUBE, FLUORESCENT	
FLT701	1-519-409-11	INDICATOR TUBE, FLUORESCENT	

(3)

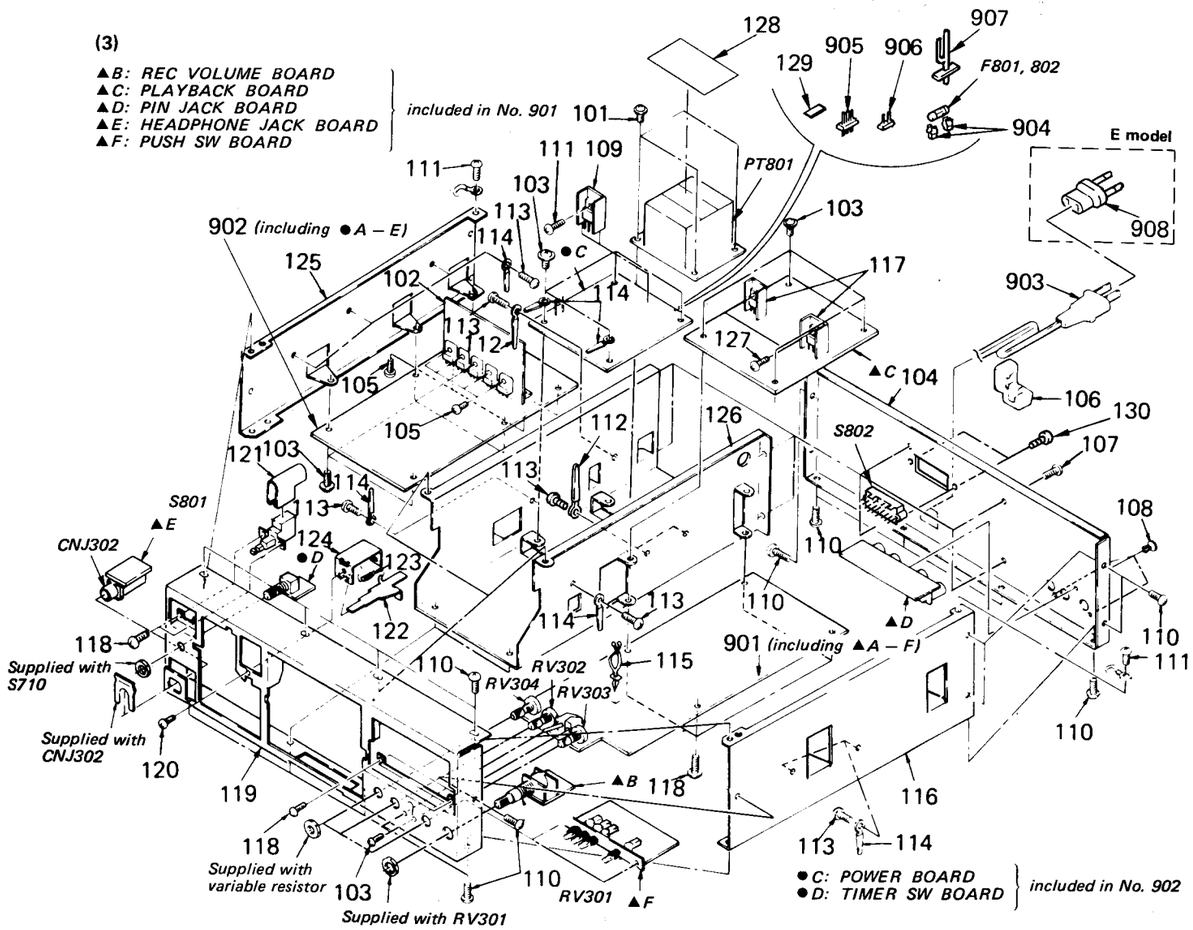
▲B: REC VOL
▲C: PLAYBAC
▲D: PIN JACK
▲E: HEADPHO
▲F: PUSH SW



No.	Part
101	7-682
102	*3-304
103	4-886
104	*3-318
	*3-318
105	7-682
106	*3-703
107	3-703
108	3-646
109	*3-312
110	3-703
111	7-682
112	*3-703
113	7-682
114	*3-701
115	*4-308
116	*3-318
117	*3-309
118	7-682
119	*3-318
120	7-685
121	3-575
122	*3-318
123	3-534
124	*3-575
125	*3-318
126	*3-318
127	7-682
128	*3-318

(3)

▲B: REC VOLUME BOARD
▲C: PLAYBACK BOARD
▲D: PIN JACK BOARD
▲E: HEADPHONE JACK BOARD
▲F: PUSH SW BOARD
} included in No. 901



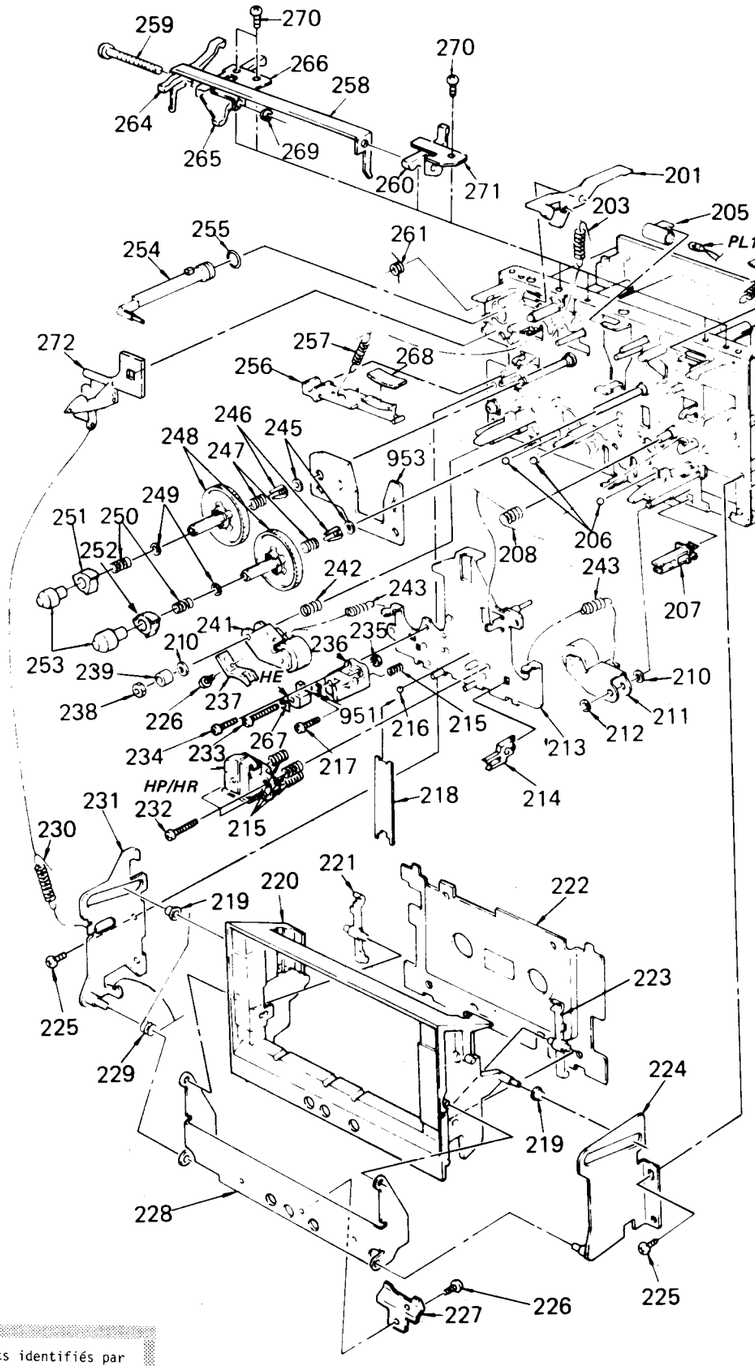
No.	Part No.	Description	Remarks
101	7-682-947-01	SCREW +PSW 3X6	
102	*3-304-987-01	HEAT SINK	
103	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
104	*3-318-658-01	(US,Canadian,AEP,G-AEP,UK)...PLATE, JACK	
	*3-318-658-11	(E).....PLATE, JACK	
105	7-682-547-09	SCREW +B 3X6	
106	*3-703-244-00	BUSHING (2104), CORD	
107	3-703-108-21	SCREW +BV 3X6, S TIGHT	
108	3-646-090-11	RIVET, NYLON	
109	*3-312-615-31	HEAT SINK	
110	3-703-685-21	SCREW (+BV 3X8)	
111	7-682-147-01	SCREW +BVTT 3X6 (S)	
112	*3-703-150-11	CLAMP	
113	7-682-546-04	SCREW +BVTT 3X5 (S)	
114	*3-701-822-00	HOLDER, WIRE	
115	*4-308-851-00	PURSE LOCK	
116	*3-318-657-01	PLATE, SIDE, RIGHT	
117	*3-309-144-01	HEAT SINK	
118	7-682-647-09	SCREW +PS 3X6	
119	*3-318-665-01	CHASSIS, AMPLIFIER	
120	7-685-791-09	SCREW +BVTT 2.6X5 (S)	
121	3-575-524-00	COVER, POWER SWITCH	
122	*3-318-628-01	SLIDER, EJECT	
123	3-534-238-XX	SPRING, TENSION	
124	*3-575-502-00	BRACKET, EJECT	
125	*3-318-656-01	PLATE, SIDE, LEFT	
126	*3-318-664-01	PLATE, RELAY	
127	7-682-147-15	SCREW, TR	
128	*3-318-666-01	LABEL, TRANSFORMER	

No.	Part No.	Description	Remarks
129	*3-701-948-16	(AEP,G-AEP,UK,E)...LABEL, FUSE	
130	7-685-646-79	(E)...SCREW +BTP 3X8	
901	*A-2010-255-A	PC BOARD ASSY, AUDIO	
902	*A-2019-203-A	(E).....PC BOARD ASSY, SYSTEM CONTROL	
	*A-2019-204-A	(AEP,G-AEP,UK) ....PC BOARD ASSY, SYSTEM CONTROL	
	*A-2019-205-A	(US,Canadian) ....PC BOARD ASSY, SYSTEM CONTROL	
903	⚠1-555-701-00	(US,Canadian)...CORD, POWER	
	⚠1-555-795-00	(AEP,G-AEP).....CORD, POWER	
	⚠1-556-035-00	(UK).....CORD, POWER	
	⚠1-556-091-00	(E).....CORD, POWER	
904	1-533-162-00	HOLDER, FUSE	
905	*1-535-116-00	TERMINAL	
906	*1-535-139-00	(US,Canadian,AEP,G-AEP,UK) ...BASE POST 19MM (10MM PITCH) 2P	
	*1-535-139-21	(E).....BASE POST 22MM (10MM PITCH)	
907	1-535-416-00	(AEP,G-AEP,UK)...TERMINAL	
908	⚠1-526-565-00	(E)....AC PLUG ADAPTOR	
F801	⚠1-532-259-00	(AEP,G-AEP,UK,E)...FUSE, TIME-LAG 1.6A	
F801	⚠1-532-742-11	(US,Canadian)...FUSE, GLASS TUBE 1.6A	
F802	⚠1-532-259-00	(AEP,G-AEP,UK,E)...FUSE, TIME-LAG 1.6A	
F802	⚠1-532-742-11	(US,Canadian)...FUSE, GLASS TUBE 1.6A	
PT801	⚠1-448-948-11	(US,Canadian,AEP,G-AEP,UK) ...TRANSFORMER, POWER	
PT801	⚠1-449-005-11	(E).....TRANSFORMER, POWER	
S801	⚠1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY)	
S802	⚠1-570-307-11	(E)...SWITCH, VOLTAGE CHANGE	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

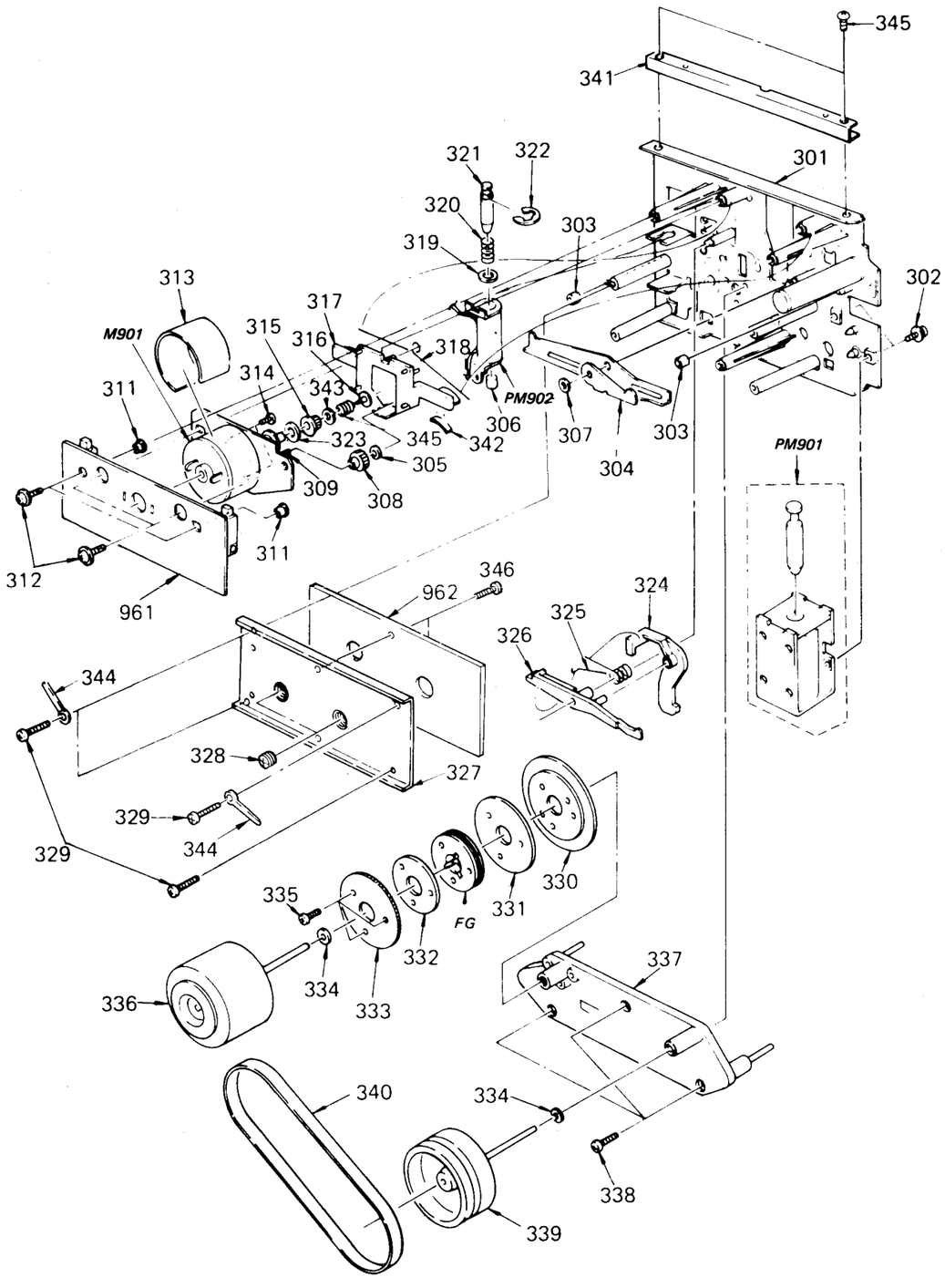
(4)



(5)

No.	Part No.	Description	Remarks
201	3-575-449-00	LEVER, DETECTION, REC	
202	3-575-331-00	LEVER, DETECTION, HALF	
203	3-650-542-00	SPRING, TENSION	
204	3-575-358-00	SPRING, TENSION	
205	3-575-328-00	HOLDER, LAMP	
206	7-671-112-11	BALL, STEEL	
207	*3-575-378-00	GUIDE, LEAD	
208	3-575-351-00	SPRING	
210	3-701-439-21	WASHER	
211	X-3575-380-1	PINCH LEVER (T) ASSY	
212	7-624-105-04	STOP RING 2.3, TYPE -E	
213	X-3575-323-0	CHASSIS ASSY, HEAD	
214	*3-304-963-00	RETAINER, LEAD	
215	3-564-121-00	SPRING, COMPRESSION	
216	7-671-113-11	BALL, STEEL	
217	7-621-775-20	SCREW +B 2.6X5	
218	*3-575-377-00	SPRING	
219	3-575-348-00	ROLLER, GUIDE, THREADING	
220	3-575-355-31	HOLDER, CASSETTE	
221	3-555-114-00	SPRING (LEFT)	
222	X-3575-399-1	PLATE ASSY, ORNAMENTAL	
223	3-555-113-00	SPRING (RIGHT)	
224	*X-3575-339-0	PLATE (RIGHT) ASSY, FULCRUM	
225	7-621-259-35	SCREW +PTT 2.6X5 (S)	
226	7-721-772-10	SCREW +B 2X4	
227	3-304-639-00	PLATE, SHIELD, HEAD	
228	3-306-215-00	LEVER, FULCRUM, HOLDER	
229	3-575-356-00	SPRING	
230	3-575-364-00	SPRING, TENSION	
231	*X-3575-338-0	PLATE (LEFT) ASSY, FULCRUM	
232	3-701-467-00	SCREW, LOCK	
233	7-621-772-88	SCREW +B 2X16	
234	7-621-771-06	SCREW +B 2X5	
235	7-622-205-05	NUT M2 TYPE2	
236	*3-306-216-00	BRACKET, HEAD, ERASE	
237	3-564-138-00	GUIDE (S), TAPE	
238	7-684-023-04	N 3, TYPE 2	
239	3-491-191-00	COLLAR	
241	X-3575-321-0	PINCH LEVER (S) ASSY	
242	3-537-213-00	SPRING, COMPRESSION	
243	3-575-481-00	SPRING, TENSION	
245	3-701-439-11	WASHER	
246	3-318-405-01	RETAINER, SPRING	
247	3-571-850-11	SPRING, COMPRESSION	
248	3-318-438-01	TABLE, REEL	
249	3-558-708-11	WASHER, STOPPER	
250	3-576-921-00	SPRING, COMPRESSION	
251	3-531-760-00	CLAW, REEL SPINDLE	
252	3-558-339-00	CLAW (R), REEL TABLE	
253	3-576-983-01	CAP, REEL	
254	3-575-459-00	PISTON	
255	3-575-392-00	RING, PISTON	
256	X-3575-310-0	LEVER ASSY, TENSION, BACK	
257	3-307-381-00	SPRING, TENSION	
258	*3-306-279-00	LEVER, ERASING PROTECTION	
259	*3-306-281-00	SHAFT, DETECTION LEVER	
260	*3-306-282-00	LEVER, REC DETECTION, REVERSE	
261	3-318-408-01	SPRING	
262	9-911-815-02	CUSHION	
264	3-575-438-00	LEVER, DETECTION	
265	3-575-446-00	LEVER, DETECTION, METAL	
266	*3-575-440-00	BRACKET, LEVER, DETECTION	
267	3-318-433-01	SPRING	
268	3-575-346-01	FELT, BREKE	
269	7-624-104-04	STOP RING 2.0, TYPE -E	
270	7-682-546-04	SCREW +BVTT 3X5 (S)	
271	*X-3575-364-0	BRACKET ASSY, LEVER	
272	3-575-448-00	LEVER, LOCK	
951	*1-608-268-00	PC BOARD, ERASE HEAD	
953	*1-603-823-00	PC BOARD, PHOTO	
HE	1-543-358-11	HEAD, MAGNETIC (ERASE)	
HP	8-825-770-51	HEAD, REC/PB RPA230-3602C	
PL101	1-518-313-00	LAMP, PILOT	

No.	Part No.	Description	Remarks
301	*X-3306-201-1	CHASSIS ASSY, MECHANICAL	
302	7-682-649-09	SCREW +PSW 3X10	
303	4-855-109-12	RUBBER, LIFTER CUSHION	
304	*3-306-260-00	LEVER, FWD	
305	3-558-708-01	WASHER, STOPPER	
306	3-575-416-11	ARBOR, FIXED	
307	3-558-708-11	WASHER, STOPPER	
308	3-575-332-00	GEAR, FR	
309	3-575-304-00	SHAFT, GEAR, FR	
311	3-306-277-00	LIFTER, PC BOARD	
312	7-687-246-21	SCREW, TOTSU PTPWH 3X8, TYPE2	
313	3-306-209-00	PLATE (D), SHIELD, MOTOR	
314	7-621-775-10	SCREW +B 2.6X4	
315	3-575-324-00	GEAR, LIMITER	
316	3-575-327-00	STOPPER	
317	*X-3575-342-0	PLATE ASSY, BRAKE	
318	3-575-345-00	SPRING	
319	3-701-444-11	WASHER, 6	
320	3-575-414-00	SPRING, COMPRESSION	
321	3-575-415-11	ARBOR, MOVABLE	
322	7-624-109-04	STOP RING 5.0, TYPE -E	
323	3-564-027-11	FELT, LIMITER	
324	3-575-318-00	LEVER, LOCK, TUNING	
325	3-575-458-00	SPRING	
326	3-575-460-00	LEVER, SELECT TUNE	
327	X-3306-202-1	RETAINER ASSY, THRUST	
328	3-489-073-00	SCREW, THRUST	
329	7-682-647-09	SCREW +PS 3X6	
330	*3-310-831-01	PLATE, SHIELD, MOTOR	
331	*3-576-810-00	PLATE, RETURN CIRCUIT	
332	3-310-865-00	WASHER, INSULATING	
333	3-576-961-11	PLATE, FG	
334	3-701-438-21	WASHER	
335	7-621-775-60	SCREW +B 2.6X12	
336	X-3575-377-1	FLYWHEEL (TAKE-UP) ASSY	
337	X-3575-383-1	BASE ASSY, CAPSTAN	
338	7-621-259-35	SCREW +PTT 2.6X5 (S)	
339	X-3575-378-1	FLYWHEEL (SUPPLY) ASSY	
340	3-576-812-00	BELT, CAPSTAN	
341	*3-318-437-01	BRACKET, MD	
342	3-575-469-00	SHOE, BRAKE	
343	3-701-441-11	WASHER	
344	3-701-748-00	CLAMP	
345	3-575-487-01	SPRING, COMPRESSION	
346	7-621-259-35	SCREW +BVTT 2.6X5 (S)	
961	*1-620-542-11	PC BOARD, MD SWITCH	
962	*1-620-086-11	PC BOARD, CAPSTAN	
FG	1-459-426-00	COIL	
M901	X-3575-382-1	MOTOR ASSY, REEL	
PM901	1-454-333-00	SOLENOID, PLUNGER	
PM902	1-454-291-00	SOLENOID, PLUNGER	



SECTION 4
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
· All resistors are in ohms.
· F : nonflammable

COILS
· MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-2010-255-A	PC BOARD ASSY, AUDIO			
902	*A-2019-203-A	(E)...PC BOARD ASSY, SYSTEM CONTROL			
	*A-2019-204-A	(AEP,G-AEP,UK)...PC BOARD ASSY, SYSTEM CONTROL			
	*A-2019-205-A	(US,Canadian)....PC BOARD ASSY, SYSTEM CONTROL			
903	⚠1-555-701-00	(US,Canadian)...CORD, POWER			
	⚠1-555-795-00	(AEP,G-AEP).....CORD, POWER			
	⚠1-556-035-00	(UK).....CORD, POWER			
	⚠1-556-091-00	(E).....CORD, POWER			
904	1-533-162-00	HOLDER, FUSE			
905	*1-535-116-00	TERMINAL			
906	*1-535-139-00	(US,Canadian,AEP,G-AEP,UK) ...BASE POST 19MM (10MM PITCH) 2P			
	*1-535-139-21	(E).....BASE POST 22MM (10MM PITCH)			
907	1-535-416-00	(AEP,G-AEP,UK)...TERMINAL			
908	⚠1-535-516-00	(E)....AC PLUG ADAPTOR			
951	*1-608-268-00	PC BOARD, ERASE HEAD			
953	*1-603-823-00	PC BOARD, PHOTO			
961	*1-620-542-11	PC BOARD, MD SWITCH			
962	*1-620-086-11	PC BOARD, CAPSTAN			
C101	1-130-893-00	FILM	0.027MF	3%	100V
C102	1-124-657-00	ELECT	10MF	20%	50V
C103	1-130-893-00	FILM	0.027MF	3%	100V
C104	1-110-201-00	MYLAR	0.0033MF	5%	50V
C105	1-136-433-11	FILM	100PF	5%	630V
C106	1-130-471-00	MYLAR	0.001MF	5%	50V
C107	1-130-475-00	MYLAR	0.0022MF	5%	50V
C108	1-130-475-00	MYLAR	0.0022MF	5%	50V
C109	1-130-478-00	MYLAR	0.0039MF	5%	50V
C110	1-136-173-00	FILM	0.47MF	5%	50V
C111	1-136-167-00	FILM	0.15MF	5%	50V
C112	1-136-155-00	FILM	0.015MF	5%	50V
C113	1-124-611-00	ELECT	1MF	20%	50V
C114	1-136-169-00	FILM	0.22MF	5%	50V
C115	1-136-163-00	FILM	0.068MF	5%	50V
C116	1-136-162-00	FILM	0.056MF	5%	50V
C117	1-124-611-00	ELECT	1MF	20%	50V
C118	1-130-480-00	MYLAR	0.0056MF	5%	50V
C119	1-136-153-00	FILM	0.01MF	5%	50V
C120	1-124-657-00	ELECT	10MF	20%	50V
C121	1-123-381-00	ELECT	2.2MF	20%	50V
C122	1-124-767-00	ELECT	2.2MF	20%	50V
C123	1-136-440-11	FILM	39PF	5%	630V
C124	1-136-440-11	FILM	39PF	5%	630V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C125	1-130-475-00	MYLAR	0.0022MF	5%	50V
C126	1-130-475-00	MYLAR	0.0022MF	5%	50V
C127	1-130-478-00	MYLAR	0.0039MF	5%	50V
C128	1-136-173-00	FILM	0.47MF	5%	50V
C129	1-136-167-00	FILM	0.15MF	5%	50V
C130	1-136-155-00	FILM	0.015MF	5%	50V
C131	1-124-611-00	ELECT	1MF	20%	50V
C132	1-136-169-00	FILM	0.22MF	5%	50V
C133	1-136-163-00	FILM	0.068MF	5%	50V
C134	1-136-162-00	FILM	0.056MF	5%	50V
C135	1-124-611-00	ELECT	1MF	20%	50V
C136	1-130-480-00	MYLAR	0.0056MF	5%	50V
C137	1-136-153-00	FILM	0.01MF	5%	50V
C138	1-123-357-00	ELECT	22MF	20%	50V
C139	1-123-356-00	ELECT	10MF	20%	50V
C140	1-130-473-00	MYLAR	0.0015MF	5%	50V
C141	1-123-369-00	ELECT	4.7MF	20%	50V
C142	1-123-333-00	ELECT	100MF	20%	25V
C143	1-136-164-00	FILM	0.082MF	5%	50V
C144	1-123-357-00	ELECT	22MF	20%	50V
C145	1-136-155-00	FILM	0.015MF	5%	50V
C146	1-136-153-00	FILM	0.01MF	5%	50V
C147	1-136-157-00	FILM	0.022MF	5%	50V
C148	1-136-155-00	FILM	0.015MF	5%	50V
C149	1-136-156-00	FILM	0.018MF	5%	50V
C150	1-130-475-00	MYLAR	0.0022MF	5%	50V
C151	1-130-473-00	MYLAR	0.0015MF	5%	50V
C152	1-136-436-11	FILM	180PF	5%	630V
C153	1-136-271-00	FILM	56PF	5%	630V
C154	1-124-767-00	ELECT	2.2MF	20%	50V
C155	1-124-767-00	ELECT	2.2MF	20%	50V
C156	1-124-927-11	ELECT	4.7MF	20%	50V
C201	1-130-893-00	FILM	0.027MF	3%	100V
C202	1-124-657-00	ELECT	10MF	20%	50V
C203	1-130-893-00	FILM	0.027MF	3%	100V
C204	1-110-201-00	MYLAR	0.0033MF	5%	50V
C205	1-136-433-11	FILM	100PF	5%	630V
C206	1-130-471-00	MYLAR	0.001MF	5%	50V
C207	1-130-475-00	MYLAR	0.0022MF	5%	50V
C208	1-130-475-00	MYLAR	0.0022MF	5%	50V
C209	1-130-478-00	MYLAR	0.0039MF	5%	50V
C210	1-136-173-00	FILM	0.47MF	5%	50V
C211	1-136-167-00	FILM	0.15MF	5%	50V
C212	1-136-155-00	FILM	0.015MF	5%	50V
C213	1-124-611-00	ELECT	1MF	20%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C214	1-136-169-00	FILM	0.22MF	5%	50V
C215	1-136-163-00	FILM	0.068MF	5%	50V
C216	1-136-162-00	FILM	0.056MF	5%	50V
C217	1-124-611-00	ELECT	1MF	20%	50V
C218	1-130-480-00	MYLAR	0.0056MF	5%	50V
C219	1-136-153-00	FILM	0.01MF	5%	50V
C220	1-124-657-00	ELECT	10MF	20%	50V
C221	1-123-381-00	ELECT	2.2MF	20%	50V
C222	1-124-767-00	ELECT	2.2MF	20%	50V
C223	1-136-440-11	FILM	39PF	5%	630V
C224	1-136-440-11	FILM	39PF	5%	630V
C225	1-130-475-00	MYLAR	0.0022MF	5%	50V
C226	1-130-475-00	MYLAR	0.0022MF	5%	50V
C227	1-130-478-00	MYLAR	0.0039MF	5%	50V
C228	1-136-173-00	FILM	0.47MF	5%	50V
C229	1-136-167-00	FILM	0.15MF	5%	50V
C230	1-136-155-00	FILM	0.015MF	5%	50V
C231	1-124-611-00	ELECT	1MF	20%	50V
C232	1-136-169-00	FILM	0.22MF	5%	50V
C233	1-136-163-00	FILM	0.068MF	5%	50V
C234	1-136-162-00	FILM	0.056MF	5%	50V
C235	1-124-611-00	ELECT	1MF	20%	50V
C236	1-130-480-00	MYLAR	0.0056MF	5%	50V
C237	1-136-153-00	FILM	0.01MF	5%	50V
C238	1-123-357-00	ELECT	22MF	20%	50V
C239	1-123-356-00	ELECT	10MF	20%	50V
C240	1-130-473-00	MYLAR	0.0015MF	5%	50V
C241	1-123-369-00	ELECT	4.7MF	20%	50V
C242	1-123-333-00	ELECT	100MF	20%	25V
C243	1-136-164-00	FILM	0.082MF	5%	50V
C244	1-123-357-00	ELECT	22MF	20%	50V
C245	1-136-155-00	FILM	0.015MF	5%	50V
C246	1-136-153-00	FILM	0.01MF	5%	50V
C247	1-136-157-00	FILM	0.022MF	5%	50V
C248	1-136-155-00	FILM	0.015MF	5%	50V
C249	1-136-156-00	FILM	0.018MF	5%	50V
C250	1-130-475-00	MYLAR	0.0022MF	5%	50V
C251	1-130-473-00	MYLAR	0.0015MF	5%	50V
C252	1-136-436-11	FILM	180PF	5%	630V
C253	1-136-271-00	FILM	56PF	5%	630V
C254	1-124-767-00	ELECT	2.2MF	20%	50V
C255	1-124-767-00	ELECT	2.2MF	20%	50V
C256	1-124-927-11	ELECT	4.7MF	20%	50V
C301	1-123-377-00	ELECT	470MF	20%	63V
C302	1-123-377-00	ELECT	470MF	20%	63V
C303	1-123-378-00	ELECT	1000MF	20%	63V
C304	1-123-378-00	ELECT	1000MF	20%	63V
C307	1-123-356-00	ELECT	10MF	20%	50V
C308	1-123-356-00	ELECT	10MF	20%	50V
C309	1-123-875-91	ELECT	10MF	20%	50V
C310	1-123-875-91	ELECT	10MF	20%	50V
C311	1-123-875-91	ELECT	10MF	20%	50V
C312	1-162-282-31	CERAMIC	100PF	10%	50V
C313	1-162-282-31	CERAMIC	100PF	10%	50V
C314	1-162-282-31	CERAMIC	100PF	10%	50V
C315	1-124-925-11	ELECT	2.2MF	20%	50V
C316	1-123-356-00	ELECT	10MF	20%	50V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C317	1-123-356-00	ELECT	10MF	20%	50V
C318	1-123-333-00	ELECT	100MF	20%	16V
C319	1-123-333-00	ELECT	100MF	20%	16V
C320	1-124-477-11	ELECT	47MF	20%	25V
C321	1-123-333-00	ELECT	100MF	20%	16V
C322	1-123-333-00	ELECT	100MF	20%	16V
C323	1-124-477-11	ELECT	47MF	20%	25V
C324	1-162-294-31	CERAMIC	0.001MF	10%	50V
C325	1-136-156-00	FILM	0.018MF	5%	50V
C326	1-131-368-00	TANTALUM	3.3MF	10%	10V
C327	1-162-291-31	CERAMIC	560PF	10%	50V
C328	1-162-291-31	CERAMIC	560PF	10%	50V
C329	1-162-294-31	CERAMIC	0.001MF	10%	50V
C701	1-124-911-11	ELECT	220MF	20%	50V
C702	1-124-557-11	ELECT	1000MF	20%	25V
C703	1-124-791-11	ELECT	1MF	20%	50V
C704	1-124-472-11	ELECT	470MF	20%	10V
C705	1-123-875-91	ELECT	10MF	20%	50V
C706	1-124-472-11	ELECT	470MF	20%	10V
C707	1-124-477-11	ELECT	47MF	20%	25V
C708	1-162-211-31	CERAMIC	33PF	5%	50V
C709	1-124-472-11	ELECT	470MF	20%	10V
C710	1-123-875-91	ELECT	10MF	20%	50V
C711	1-124-121-00	ELECT	100MF	20%	35V
C712	1-124-477-11	ELECT	47MF	20%	25V
C713	1-162-203-31	CERAMIC	15PF	5%	50V
C714	1-162-203-31	CERAMIC	15PF	5%	50V
C715	1-136-157-00	FILM	0.022MF	5%	50V
C716	1-124-477-11	ELECT	47MF	20%	25V
C717	1-161-327-00	CERAMIC	0.0033MF	20%	16V
C718	1-161-327-00	CERAMIC	0.0033MF	20%	16V
C719	1-162-211-31	CERAMIC	33PF	5%	50V
C720	1-162-211-31	CERAMIC	33PF	5%	50V
C721	1-124-443-00	ELECT	100MF	20%	10V
C722	1-124-443-00	(US,Canadian)...ELECT	100MF	20%	10V
C723	1-162-284-31	(US,Canadian)...CERAMIC	150PF	10%	50V
C724	1-162-284-31	(US,Canadian)...CERAMIC	150PF	10%	50V
C725	1-162-294-31	(US,Canadian)...CERAMIC	0.001MF	10%	50V
C726	1-124-477-11	ELECT	47MF	20%	25V
C727	1-124-443-00	ELECT	100MF	20%	10V
C728	1-136-159-00	FILM	0.033MF	5%	50V
C801	⚠1-161-744-00	CERAMIC	0.01MF		400V
C802	1-123-875-91	ELECT	10MF	20%	50V
C803	1-124-791-11	ELECT	1MF	20%	50V
C804	1-124-911-11	ELECT	220MF	20%	50V
C805	1-124-637-11	ELECT	1000MF	20%	50V
C806	1-124-636-00	ELECT	3300MF	20%	25V
C807	1-123-875-91	ELECT	10MF	20%	50V
C808	1-124-121-00	ELECT	100MF	20%	35V
C809	1-126-129-11	ELECT	6800MF	20%	35V
C810	1-126-129-11	ELECT	6800MF	20%	35V
C811	1-136-165-00	FILM	0.1MF	5%	50V
C812	1-136-177-00	FILM	1MF	5%	50V
C901	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C902	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C903	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C904	1-163-077-00	CERAMIC CHIP	0.1MF		50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C905	1-124-779-00	ELECT	10MF	20%	16V
C906	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C907	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C908	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C909	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C910	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C911	1-124-779-00	ELECT	10MF	20%	16V
C1001	1-123-875-91	ELECT	10MF	20%	50V
C1002	1-123-875-91	ELECT	10MF	20%	50V
CN301	*1-560-062-00	PIN, CONNECTOR 4P			
CN302	*1-564-507-11	PLUG, CONNECTOR 4P			
CN303	*1-564-506-11	PLUG, CONNECTOR 3P			
CN304	*1-560-062-00	PIN, CONNECTOR 4P			
CN305	*1-560-061-00	PIN, CONNECTOR 3P			
CN306	*1-564-338-61	PIN, CONNECTOR 4P			
CN307	*1-564-340-21	PIN, CONNECTOR 6P			
CN308	*1-564-340-00	PIN, CONNECTOR 6P			
CN309	*1-564-338-51	PIN, CONNECTOR 4P			
CN310	*1-564-338-21	PIN, CONNECTOR 4P			
CN311	*1-564-338-71	PIN, CONNECTOR 4P			
CN312	*1-564-337-51	PIN, CONNECTOR 3P			
CN701	*1-564-508-11	PLUG, CONNECTOR 5P			
CN702	*1-564-337-51	(US,Canadian)...PIN, CONNECTOR 3P			
CN703	*1-564-336-21	PIN, CONNECTOR 2P			
CN704	*1-564-340-21	PIN, CONNECTOR 6P			
CN705	*1-564-339-61	PIN, CONNECTOR 5P			
CN706	*1-564-339-51	PIN, CONNECTOR 5P			
CN707	*1-564-338-61	PIN, CONNECTOR 4P			
CN708	*1-564-338-51	PIN, CONNECTOR 4P			
CN709	*1-564-337-61	PIN, CONNECTOR 3P			
CN710	*1-564-342-51	PIN, CONNECTOR 8P			
CN711	*1-564-341-51	PIN, CONNECTOR 7P			
CN712	*1-564-507-11	PLUG, CONNECTOR 4P			
CNJ301	1-507-531-31	PLATE, PIN-JACK			
CNJ302	1-507-796-21	JACK			
CP301	1-464-328-11	OSCILLATION UNIT, BIAS			
CT301	1-141-225-00	CAP, TUNING, TRIMAR			
D301	8-719-000-26	DIODE US1060M			
D302	8-719-933-47	DIODE HZS7B2L			
D303	8-719-000-26	DIODE US1060M			
D304	8-719-000-26	DIODE US1060M			
D305	8-719-000-26	DIODE US1060M			
D306	8-719-000-26	DIODE US1060M			
D307	8-719-000-26	DIODE US1060M			
D308	8-719-000-26	DIODE US1060M			
D309	8-719-000-26	DIODE US1060M			
D310	8-719-000-26	DIODE US1060M			
D311	8-719-114-30	DIODE RD5.1JS-B2			
D312	8-719-114-30	DIODE RD5.1JS-B2			
D313	8-719-933-71	DIODE HZS11C3L			
D314	8-719-933-71	DIODE HZS11C3L			
D701	8-719-933-41	DIODE HZS6C3L			
D702	8-719-933-57	DIODE HZS9B2L			
D703	8-719-933-36	DIODE HZS6B1L			
D704	8-719-934-13	DIODE HZS24-1L			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D705	8-719-114-30	DIODE RD5.1JS-B2
D706	8-719-200-77	DIODE 10E2N
D707	8-719-200-77	DIODE 10E2N
D708	8-719-200-77	DIODE 10E2N
D709	8-719-900-79	DIODE BG5628S
D710	8-719-956-28	DIODE BR5628S
D711	8-719-907-85	DIODE AA5638S
D712	8-719-000-26	DIODE US1060M
D713	8-719-114-30	DIODE RD5.1JS-B2
D714	8-719-000-26	DIODE US1060M
D801	8-719-114-30	DIODE RD5.1JS-B2
D802	8-719-000-26	DIODE US1060M
D803	8-719-502-20	DIODE S2VB20
D804	8-719-200-77	DIODE 10E2N
D805	8-719-200-77	DIODE 10E2N
D80^	8-719-934-18	DIODE HZS27-2L
D807	8-719-230-04	DIODE 30D4
D808	8-719-230-04	DIODE 30D4
D809	8-719-230-04	DIODE 30D4
D810	8-719-230-04	DIODE 30D4
D1001	8-719-940-76	DIODE 1SS132
D1002	8-719-940-76	DIODE 1SS132
F801 ⚠	1-532-259-00	(AEP,G-AEP,UK,E)...FUSE, TIME-LAG 1.6A
F801 ⚠	1-532-742-11	(US,Canadian)....FUSE, GLASS TUBE 1.6A
F802 ⚠	1-532-259-00	(AEP,G-AEP,UK,E)...FUSE, TIME-LAG 1.6A
F802 ⚠	1-532-742-11	(US,Canadian)....FUSE, GLASS TUBE 1.6A
FG	1-459-426-00	COIL
FLT301	1-519-408-11	INDICATOR TUBE, FLUORESCENT
FLT701	1-519-409-11	INDICATOR TUBE, FLUORESCENT
H901	8-719-404-05	OH009-TW
H902	8-719-404-05	OH009-TW
H903	8-719-404-05	OH009-TW
HE	1-543-358-11	HEAD, MAGNETIC (ERASE)
HP	8-825-770-51	HEAD, REC/PB RPA230-3602C
IC301	8-759-604-38	IC M5F78M10
IC302	8-759-604-44	IC M5F79M10
IC303	8-759-602-01	IC M5220P
IC304	8-752-018-80	IC CX20188
IC305	8-759-602-83	IC M5238P
IC306	8-752-018-80	IC CX20188
IC307	8-759-745-60	IC NJM4560D
IC308	8-759-745-60	IC NJM4560D
IC309	8-759-178-12	IC UPC78L12
IC310	8-759-145-58	IC UPC4558C
IC311	8-759-961-38	IC BA6138
IC312	8-759-904-72	IC MSL9359RS
IC701	8-759-938-34	IC MB88517B-228N
IC702	8-759-602-47	(US,Canadian)...IC M50761-417P
IC703	8-759-601-45	IC M4069UBP
IC704	8-759-201-58	IC TC9142P
IC705	8-741-138-70	(US,Canadian)...IC BX-1387
IC706	8-759-905-48	IC MSL9512RS
IC901	8-759-100-96	IC UPC4558G2
IC902	8-752-017-40	IC CX20174

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
JR901	1-216-296-00	METAL CHIP	0	5%	1/8W
JR902	1-216-296-00	METAL CHIP	0	5%	1/8W
JR903	1-216-296-00	METAL CHIP	0	5%	1/8W
JR904	1-216-296-00	METAL CHIP	0	5%	1/8W
JR905	1-216-296-00	METAL CHIP	0	5%	1/8W
L101	1-407-240-00	MICRO INDUCTOR	22MMH		
L102	1-408-253-00	MICRO INDUCTOR	4.7MMH		
L103	1-408-250-00	MICRO INDUCTOR	2.7MMH		
L104	1-408-249-00	MICRO INDUCTOR	2.2MMH		
L105	1-408-258-00	MICRO INDUCTOR	12MMH		
L201	1-407-240-00	MICRO INDUCTOR	22MMH		
L202	1-408-253-00	MICRO INDUCTOR	4.7MMH		
L203	1-408-250-00	MICRO INDUCTOR	2.7MMH		
L204	1-408-249-00	MICRO INDUCTOR	2.2MMH		
L205	1-408-258-00	MICRO INDUCTOR	12MMH		
L301	1-408-579-00	MICRO INDUCTOR	220UH		
L302	1-408-579-00	MICRO INDUCTOR	220UH		
L303	1-408-579-00	MICRO INDUCTOR	220UH		
LPF101	1-231-388-00	FILTER, LOW PASS			
LPF201	1-231-388-00	FILTER, LOW PASS			
M901	X-3575-382-1	MOTOR ASSY, REEL			
PL101	1-518-313-00	LAMP, PILOT			
PM901	1-454-333-00	SOLENOID, PLUNGER			
PM902	1-454-291-00	SOLENOID, PLUNGER			
PT801 ⚠	1-448-948-11	(US,Canadian,AEP,G-AEP,UK) ...TRANSFORMER, POWER			
PT801 ⚠	1-449-005-11	(E).....TRANSFORMER, POWER			
Q101	8-729-107-84	TRANSISTOR 2SC3623A			
Q102	8-729-100-12	TRANSISTOR 2SC2001-L			
Q103	8-729-107-84	TRANSISTOR 2SC3623A			
Q104	8-729-107-84	TRANSISTOR 2SC3623A			
Q105	8-729-107-84	TRANSISTOR 2SC3623A			
Q106	8-729-107-84	TRANSISTOR 2SC3623A			
Q201	8-729-107-84	TRANSISTOR 2SC3623A			
Q202	8-729-100-12	TRANSISTOR 2SC2001-L			
Q203	8-729-107-84	TRANSISTOR 2SC3623A			
Q204	8-729-107-84	TRANSISTOR 2SC3623A			
Q205	8-729-107-84	TRANSISTOR 2SC3623A			
Q206	8-729-107-84	TRANSISTOR 2SC3623A			
Q301	8-729-600-27	TRANSISTOR 2SC634SP			
Q302	8-729-806-16	TRANSISTOR 2SC1346			
Q303	8-729-806-38	TRANSISTOR 2SC3399			
Q304	8-729-806-34	TRANSISTOR 2SC3400			
Q305	8-729-806-34	TRANSISTOR 2SC3400			
Q306	8-729-806-34	TRANSISTOR 2SC3400			
Q307	8-729-806-34	TRANSISTOR 2SC3400			
Q308	8-729-806-34	TRANSISTOR 2SC3400			
Q309	8-729-281-53	TRANSISTOR 2SC1815-GR			
Q310	8-729-281-53	TRANSISTOR 2SC1815-GR			
Q311	8-729-600-27	TRANSISTOR 2SC634SP			
Q312	8-729-806-34	TRANSISTOR 2SC3400			
Q313	8-729-806-34	TRANSISTOR 2SC3400			
Q314	8-729-204-83	TRANSISTOR 2SA1048-GR			
Q315	8-729-806-20	TRANSISTOR 2SA1345			
Q316	8-729-806-38	TRANSISTOR 2SC3399			
Q317	8-729-806-20	TRANSISTOR 2SA1345			
Q318	8-729-806-20	TRANSISTOR 2SA1345			

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q319	8-729-806-20	TRANSISTOR 2SA1345			
Q320	8-729-806-20	TRANSISTOR 2SA1345			
Q321	8-729-806-20	TRANSISTOR 2SA1345			
Q701	8-729-107-26	TRANSISTOR 2SD1585-K			
Q702	8-729-107-26	TRANSISTOR 2SD1585-K			
Q703	8-729-107-26	TRANSISTOR 2SD1585-K			
Q704	8-729-107-26	TRANSISTOR 2SD1585-K			
Q705	8-729-107-26	TRANSISTOR 2SD1585-K			
Q706	8-729-600-27	TRANSISTOR 2SC634SP			
Q707	8-729-600-27	TRANSISTOR 2SC634SP			
Q708	8-729-600-27	TRANSISTOR 2SC634SP			
Q709	8-729-600-27	TRANSISTOR 2SC634SP			
Q710	8-729-600-27	TRANSISTOR 2SC634SP			
Q711	8-729-802-34	TRANSISTOR 2SD1388			
Q712	8-729-806-34	TRANSISTOR 2SC3402			
Q713	8-729-802-34	TRANSISTOR 2SD1388			
Q714	8-729-806-28	TRANSISTOR 2SC3402			
Q715	8-729-802-22	TRANSISTOR 2SB1014			
Q716	8-729-802-22	TRANSISTOR 2SB1014			
Q717	8-729-806-34	TRANSISTOR 2SC3402			
Q718	8-729-801-93	TRANSISTOR 2SD1387			
Q719	8-729-801-93	TRANSISTOR 2SD1387			
Q720	8-729-801-83	TRANSISTOR 2SB1013			
Q721	8-729-801-83	TRANSISTOR 2SB1013			
Q722	8-729-115-15	(US,Canadian)...TRANSISTOR BN1A4M			
Q801	8-729-180-93	TRANSISTOR 2SD809			
Q1001	8-729-101-02	TRANSISTOR PH102			
Q1002	8-729-101-02	TRANSISTOR PH102			
R101	1-249-466-11	CARBON	56K		1/4W
R102	1-249-531-91	CARBON	130		1/4W
R103	1-249-602-11	CARBON	120K		1/4W
R104	1-247-146-00	CARBON	4.3K		1/4W
R105	1-247-716-11	CARBON	1.8K		1/4W
R106	1-247-138-00	CARBON	2K		1/4W
R107	1-249-429-11	CARBON	10K	5%	1/6W
R108	1-247-717-11	CARBON	2.2K		1/4W
R109	1-247-710-11	CARBON	560		1/4W
R110	1-247-725-11	CARBON	10K		1/4W
R111	1-247-142-00	CARBON	3K		1/4W
R112	1-247-146-00	CARBON	4.3K		1/4W
R113	1-246-545-00	CARBON	1M	5%	1/4W
R114	1-247-710-11	CARBON	560		1/4W
R115	1-249-584-91	CARBON	22K		1/4W
R116	1-247-152-00	CARBON	7.5K	5%	1/4W
R117	1-247-154-00	CARBON	9.1K	5%	1/4W
R118	1-247-711-11	CARBON	680	5%	1/4W
R119	1-249-465-11	CARBON	47K	5%	1/4W
R120	1-249-586-11	CARBON	27K		1/4W
R121	1-247-152-00	CARBON	8.2K		1/4W
R122	1-249-469-11	CARBON	100K	5%	1/4W
R123	1-247-723-11	CARBON	6.8K	5%	1/4W
R124	1-247-720-11	CARBON	3.9K	5%	1/4W
R125	1-247-719-11	CARBON	3.3K	5%	1/4W
R126	1-247-723-11	CARBON	6.8K	5%	1/4W
R127	1-249-469-11	CARBON	100K	5%	1/4W
R128	1-247-708-11	CARBON	470		1/4W
R129	1-247-725-11	CARBON	10K		1/4W
R130	1-247-142-00	CARBON	3K		1/4W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R131	1-247-146-00	CARBON	4.3K		1/4W
R132	1-246-545-00	CARBON	1M	5%	1/4W
R133	1-247-710-11	CARBON	560		1/4W
R134	1-249-584-91	CARBON	22K		1/4W
R135	1-247-152-00	CARBON	7.5K	5%	1/4W
R136	1-247-154-00	CARBON	9.1K	5%	1/4W
R137	1-247-711-11	CARBON	680	5%	1/4W
R138	1-249-465-11	CARBON	47K	5%	1/4W
R139	1-247-721-11	CARBON	4.7K		1/4W
R140	1-249-461-11	CARBON	18K		1/4W
R141	1-247-719-11	CARBON	3.3K		1/4W
R142	1-247-723-11	CARBON	6.8K		1/4W
R143	1-249-425-11	CARBON	4.7K	5%	1/6W
R144	1-249-464-11	CARBON	39K	5%	1/4W
R145	1-249-429-11	CARBON	10K	5%	1/6W
R146	1-249-469-11	CARBON	100K	5%	1/4W
R147	1-249-459-11	CARBON	12K	5%	1/4W
R148	1-247-717-11	CARBON	2.2K		1/4W
R149	1-249-466-11	CARBON	56K		1/4W
R150	1-249-590-11	CARBON	39K		1/4W
R151	1-247-718-11	CARBON	2.7K		1/4W
R152	1-247-703-11	CARBON	180	5%	1/4W
R153	1-249-459-11	CARBON	12K	5%	1/4W
R154	1-249-429-11	CARBON	10K	5%	1/6W
R155	1-247-701-11	CARBON	120	5%	1/4W
R156	1-247-721-11	CARBON	4.7K	5%	1/4W
R157	1-247-723-11	CARBON	6.8K	5%	1/4W
R158	1-249-429-11	CARBON	10K	5%	1/6W
R159	1-247-701-11	CARBON	120	5%	1/4W
R160	1-247-719-11	CARBON	3.3K	5%	1/4W
R161	1-247-722-11	CARBON	5.6K	5%	1/4W
R162	1-249-429-11	CARBON	10K	5%	1/6W
R163	1-247-714-11	CARBON	1.2K		1/4W
R164	1-247-721-11	CARBON	4.7K	5%	1/4W
R165	1-249-461-11	CARBON	18K	5%	1/4W
R166	1-249-469-11	CARBON	100K	5%	1/4W
R167	1-247-704-11	CARBON	220	5%	1/4W
R168	1-247-710-11	CARBON	560		1/4W
R169	1-249-421-11	CARBON	2.2K	5%	1/6W
R170	1-249-397-11	CARBON	22	5%	1/6W
R171	1-247-883-00	CARBON	150K	5%	1/6W
R172	1-249-429-11	CARBON	10K	5%	1/6W
R201	1-249-466-11	CARBON	56K		1/4W
R202	1-249-531-91	CARBON	130		1/4W
R203	1-249-602-11	CARBON	120K		1/4W
R204	1-247-146-00	CARBON	4.3K		1/4W
R205	1-247-716-11	CARBON	1.8K		1/4W
R206	1-247-138-00	CARBON	2K		1/4W
R207	1-249-429-11	CARBON	10K	5%	1/6W
R208	1-247-717-11	CARBON	2.2K		1/4W
R209	1-247-710-11	CARBON	560		1/4W
R210	1-247-725-11	CARBON	10K		1/4W
R211	1-247-142-00	CARBON	3K		1/4W
R212	1-247-146-00	CARBON	4.3K		1/4W
R213	1-246-545-00	CARBON	1M	5%	1/4W
R214	1-247-710-11	CARBON	560		1/4W
R215	1-249-584-91	CARBON	22K		1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R216	1-247-152-00	CARBON	7.5K	5%	1/4W
R217	1-247-154-00	CARBON	9.1K	5%	1/4W
R218	1-247-711-11	CARBON	680	5%	1/4W
R219	1-249-465-11	CARBON	47K	5%	1/4W
R220	1-249-586-11	CARBON	27K		1/4W
R221	1-247-152-00	CARBON	8.2K		1/4W
R222	1-249-469-11	CARBON	100K	5%	1/4W
R223	1-247-723-11	CARBON	6.8K	5%	1/4W
R224	1-247-720-11	CARBON	3.9K	5%	1/4W
R225	1-247-719-11	CARBON	3.3K	5%	1/4W
R226	1-247-723-11	CARBON	6.8K	5%	1/4W
R227	1-249-469-11	CARBON	100K	5%	1/4W
R228	1-247-708-11	CARBON	470		1/4W
R229	1-247-725-11	CARBON	10K		1/4W
R230	1-247-142-00	CARBON	3K		1/4W
R231	1-247-146-00	CARBON	4.3K		1/4W
R232	1-246-545-00	CARBON	1M	5%	1/4W
R233	1-247-710-11	CARBON	560		1/4W
R234	1-249-584-91	CARBON	22K		1/4W
R235	1-247-152-00	CARBON	7.5K	5%	1/4W
R236	1-247-154-00	CARBON	9.1K	5%	1/4W
R237	1-247-711-11	CARBON	680	5%	1/4W
R238	1-249-465-11	CARBON	47K	5%	1/4W
R239	1-247-721-11	CARBON	4.7K		1/4W
R240	1-249-461-11	CARBON	18K		1/4W
R241	1-247-719-11	CARBON	3.3K		1/4W
R242	1-247-723-11	CARBON	6.8K		1/4W
R243	1-249-425-11	CARBON	4.7K	5%	1/6W
R244	1-249-464-11	CARBON	39K	5%	1/4W
R245	1-249-429-11	CARBON	10K	5%	1/6W
R246	1-249-469-11	CARBON	100K	5%	1/4W
R247	1-249-459-11	CARBON	12K	5%	1/4W
R248	1-247-717-11	CARBON	2.2K		1/4W
R249	1-249-466-11	CARBON	56K		1/4W
R250	1-249-590-11	CARBON	39K		1/4W
R251	1-247-718-11	CARBON	2.7K		1/4W
R252	1-247-703-11	CARBON	180	5%	1/4W
R253	1-249-459-11	CARBON	12K	5%	1/4W
R254	1-249-429-11	CARBON	10K	5%	1/6W
R255	1-247-701-11	CARBON	120	5%	1/4W
R256	1-247-721-11	CARBON	4.7K	5%	1/4W
R257	1-247-723-11	CARBON	6.8K	5%	1/4W
R258	1-249-429-11	CARBON	10K	5%	1/6W
R259	1-247-701-11	CARBON	120	5%	1/4W
R260	1-247-719-11	CARBON	3.3K	5%	1/4W
R261	1-247-722-11	CARBON	5.6K	5%	1/4W
R262	1-249-429-11	CARBON	10K	5%	1/6W
R263	1-247-714-11	CARBON	1.2K		1/4W
R264	1-247-721-11	CARBON	4.7K	5%	1/4W
R265	1-249-461-11	CARBON	18K	5%	1/4W
R266	1-249-469-11	CARBON	100K	5%	1/4W
R267	1-247-704-11	CARBON	220	5%	1/4W
R268	1-247-710-11	CARBON	560		1/4W
R269	1-249-421-11	CARBON	2.2K	5%	1/6W
R270	1-249-397-11	CARBON	22	5%	1/6W
R271	1-247-883-00	CARBON	150K	5%	1/6W
R272	1-249-429-11	CARBON	10K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R301	1-249-603-11	CARBON	130K		1/4W
R302	1-249-417-11	CARBON	1K	5%	1/6W
R303	1-249-438-11	CARBON	56K	5%	1/6W
R304	1-249-417-11	CARBON	1K	5%	1/6W
R305	1-249-603-11	CARBON	130K		1/4W
R306	1-249-438-11	CARBON	56K	5%	1/6W
R307	1-249-433-11	CARBON	22K	5%	1/6W
R308	1-249-421-11	CARBON	2.2K	5%	1/6W
R309	1-249-429-11	CARBON	10K	5%	1/6W
R310	1-249-438-11	CARBON	56K	5%	1/6W
R311	1-249-438-11	CARBON	56K	5%	1/6W
R312	1-249-438-11	CARBON	56K	5%	1/6W
R313	1-249-433-11	CARBON	22K	5%	1/6W
R314	1-249-438-11	CARBON	56K	5%	1/6W
R315	1-249-429-11	CARBON	10K	5%	1/6W
R316	1-249-437-11	CARBON	47K	5%	1/6W
R317	1-249-433-11	CARBON	22K	5%	1/6W
R318	1-249-438-11	CARBON	56K	5%	1/6W
R319	1-249-437-11	CARBON	47K	5%	1/6W
R320	1-249-437-11	CARBON	47K	5%	1/6W
R321	1-249-421-11	CARBON	2.2K	5%	1/6W
R322	1-249-425-11	CARBON	4.7K	5%	1/6W
R323	1-249-425-11	CARBON	4.7K	5%	1/6W
R324	1-247-838-00	CARBON	2K	5%	1/6W
R325	1-249-422-11	CARBON	2.7K	5%	1/6W
R326	1-249-441-11	CARBON	100K	5%	1/6W
R327	1-249-433-11	CARBON	22K	5%	1/6W
R328	1-249-437-11	CARBON	47K	5%	1/6W
R329	1-249-433-11	CARBON	22K	5%	1/6W
R330	1-249-437-11	CARBON	47K	5%	1/6W
R332	1-247-700-11	CARBON	100		1/4W
R333	1-247-700-11	CARBON	100		1/4W
R334	1-247-700-11	CARBON	100		1/4W
R335	1-249-433-11	CARBON	22K	5%	1/6W
R336	1-249-441-11	CARBON	100K	5%	1/6W
R337	1-249-441-11	CARBON	100K	5%	1/6W
R338	1-249-441-11	CARBON	100K	5%	1/6W
R339	1-249-429-11	CARBON	10K	5%	1/6W
R340	1-249-429-11	CARBON	10K	5%	1/6W
R341	1-249-433-11	CARBON	22K	5%	1/6W
R342	1-247-887-00	CARBON	220K	5%	1/6W
R343	1-249-410-11	CARBON	270	5%	1/6W
R344	1-249-410-11	CARBON	270	5%	1/6W
R345	1-249-441-11	CARBON	100K	5%	1/6W
R346	1-249-441-11	CARBON	100K	5%	1/6W
R347	1-249-441-11	CARBON	100K	5%	1/6W
R348	1-249-441-11	CARBON	100K	5%	1/6W
R349	1-249-441-11	CARBON	100K	5%	1/6W
R701	1-247-721-11	CARBON	4.7K	5%	1/4W
R702	1-249-437-11	CARBON	47K	5%	1/6W
R703	1-249-421-11	CARBON	2.2K	5%	1/6W
R704	1-247-717-11	CARBON	2.2K	5%	1/4W
R705	1-249-437-11	CARBON	47K	5%	1/6W
R706	1-249-421-11	CARBON	2.2K	5%	1/6W
R707	1-247-717-11	CARBON	2.2K	5%	1/4W
R708	1-247-717-11	CARBON	2.2K	5%	1/4W
R709	1-249-437-11	CARBON	47K	5%	1/6W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R710	1-249-421-11	CARBON	2.2K	5%	1/6W
R711	1-247-708-11	CARBON	470	5%	1/4W
R712	1-247-713-11	CARBON	1K	5%	1/4W
R713	1-247-717-11	CARBON	2.2K	5%	1/4W
R714	1-249-437-11	CARBON	47K	5%	1/6W
R715	1-249-421-11	CARBON	2.2K	5%	1/6W
R716	1-247-721-11	CARBON	4.7K	5%	1/4W
R717	1-247-891-00	CARBON	330K	5%	1/6W
R718	1-249-441-11	CARBON	100K	5%	1/6W
R719	1-249-417-11	CARBON	1K	5%	1/6W
R720	1-249-417-11	CARBON	1K	5%	1/6W
R721	1-249-429-11	CARBON	10K	5%	1/6W
R722	1-247-717-11	CARBON	2.2K	5%	1/4W
R723	1-249-437-11	CARBON	47K	5%	1/6W
R724	1-247-729-11	CARBON	15	5%	1/2W
R725	1-249-429-11	CARBON	10K	5%	1/6W
R726	1-247-717-11	CARBON	2.2K	5%	1/4W
R727	1-249-437-11	CARBON	47K	5%	1/6W
R728	1-249-429-11	CARBON	10K	5%	1/6W
R729	1-249-417-11	CARBON	1K	5%	1/6W
R730	1-249-417-11	CARBON	1K	5%	1/6W
R731	1-249-429-11	CARBON	10K	5%	1/6W
R732	1-249-417-11	CARBON	1K	5%	1/6W
R733	1-249-429-11	CARBON	10K	5%	1/6W
R734	1-249-417-11	CARBON	1K	5%	1/6W
R735	1-249-429-11	CARBON	10K	5%	1/6W
R736	1-247-711-11	CARBON	680	5%	1/4W
R737	1-247-715-11	CARBON	1.5K	5%	1/4W
R738 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W F
R739	1-249-437-11	CARBON	47K	5%	1/6W
R740	1-249-437-11	CARBON	47K	5%	1/6W
R741	1-247-883-00	CARBON	150K	5%	1/6W
R742	1-247-883-00	CARBON	150K	5%	1/6W
R743	1-249-417-11	CARBON	1K	5%	1/6W
R744	1-249-433-11	CARBON	22K	5%	1/6W
R745	1-249-433-11	CARBON	22K	5%	1/6W
R746	1-249-433-11	CARBON	22K	5%	1/6W
R747	1-249-433-11	CARBON	22K	5%	1/6W
R748	1-249-417-11	CARBON	1K	5%	1/6W
R749	1-249-417-11	CARBON	1K	5%	1/6W
R750	1-249-430-11	CARBON	12K	5%	1/6W
R751	1-249-430-11	CARBON	12K	5%	1/6W
R752	1-249-433-11	CARBON	22K	5%	1/6W
R753	1-249-433-11	CARBON	22K	5%	1/6W
R754	1-249-433-11	CARBON	22K	5%	1/6W
R755	1-249-433-11	CARBON	22K	5%	1/6W
R756	1-249-433-11	CARBON	22K	5%	1/6W
R757	1-249-433-11	CARBON	22K	5%	1/6W
R758	1-249-433-11	CARBON	22K	5%	1/6W
R759	1-249-441-11	CARBON	100K	5%	1/6W
R760	1-249-429-11	CARBON	10K	5%	1/6W
R761	1-249-413-11	CARBON	470	5%	1/6W
R762	1-249-413-11	CARBON	470	5%	1/6W
R763	1-249-413-11	CARBON	470	5%	1/6W
R764	1-249-413-11	CARBON	470	5%	1/6W
R765	1-249-409-11	CARBON	220	5%	1/6W
R766	1-249-413-11	CARBON	470	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R767	1-249-410-11	CARBON 270 5% 1/6W
R768	1-249-417-11	CARBON 1K 5% 1/6W
R769	1-249-417-11	CARBON 1K 5% 1/6W
R770	1-249-432-11	(US,Canadian)...CARBON 18K 5% 1/6W
R771	1-249-430-11	(US,Canadian)...CARBON 12K 5% 1/6W
R772	1-249-433-11	(US,Canadian)...CARBON 22K 5% 1/6W
R773	1-249-422-11	(US,Canadian)...CARBON 2.7K 5% 1/6W
R774	1-215-493-00	(US,Canadian)...CARBON 1M 5% 1/6W
R775	1-249-433-11	(US,Canadian)...CARBON 22K 5% 1/6W
R776	1-249-429-11	(US,Canadian)...CARBON 10K 5% 1/6W
R777	1-247-849-00	(US,Canadian)...CARBON 5.6K 5% 1/6W
R778	1-249-430-11	CARBON 12K 5% 1/6W
R779	1-249-433-11	(US,Canadian)...CARBON 22K 5% 1/6W
R780	1-249-431-11	(US,Canadian)...CARBON 15K 5% 1/6W
R781	1-249-430-11	CARBON 12K 5% 1/6W
R782	1-247-849-00	CARBON 5.6K 5% 1/6W
R783	1-249-429-11	CARBON 10K 5% 1/6W
R784	1-249-433-11	CARBON 22K 5% 1/6W
R785	1-249-431-11	CARBON 15K 5% 1/6W
R786	1-249-433-11	CARBON 22K 5% 1/6W
R787	1-249-458-11	CARBON 8.2 5% 1/4W
R788	1-247-747-11	CARBON 470 5% 1/2W
R789	1-249-429-11	CARBON 10K 5% 1/6W
R790	1-247-694-11	CARBON 33 5% 1/4W
R799	1-247-747-11	CARBON 470 5% 1/2W
R801	1-247-713-11	CARBON 1K 5% 1/4W
R802	1-247-721-11	CARBON 4.7K 5% 1/4W
R803	1-249-437-11	CARBON 47K 5% 1/6W
R804	⚠1-212-861-91	FUSIBLE 15 5% 1/4W F
R901	1-216-198-00	METAL CHIP 1K 5% 1/8W
R902	1-216-198-00	METAL CHIP 1K 5% 1/8W
R903	1-216-238-00	METAL CHIP 47K 5% 1/8W
R904	1-216-198-00	METAL CHIP 1K 5% 1/8W
R905	1-216-224-00	METAL CHIP 12K 5% 1/8W
R906	1-216-217-00	METAL CHIP 6.2K 5% 1/8W
R907	1-216-242-00	METAL CHIP 68K 5% 1/8W
R908	1-216-246-00	METAL CHIP 100K 5% 1/8W
R909	1-216-246-00	METAL CHIP 100K 5% 1/8W
R910	1-216-238-00	METAL CHIP 47K 5% 1/8W
R911	1-216-182-00	METAL CHIP 220 5% 1/8W
R912	1-216-182-00	METAL CHIP 220 5% 1/8W
R913	1-216-150-00	METAL CHIP 10 5% 1/8W
R914	1-216-150-00	METAL CHIP 10 5% 1/8W
R915	1-216-150-00	METAL CHIP 10 5% 1/8W
RV101	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K
RV102	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K
RV103	1-230-630-11	RES, ADJ, CARBON 10K
RV201	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K
RV202	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K
RV203	1-230-630-11	RES, ADJ, CARBON 10K
RV301	1-230-344-11	RES, VAR, CARBON 20K/20K (REC LEVEL)
RV302	1-237-389-11	RES, VAR, CARBON 5K/5K (REC LEVEL CALIBRATION)
RV303	1-237-388-11	RES, VAR, CARBON 20K/20K (PHONE LEVEL)

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV304	1-226-560-00	RES, VAR, CARBON 5K (BIAS CALIBRATION)
RV305	1-230-504-11	RES, ADJ, CARBON 220
RV701	1-228-990-00	RES, ADJ, CARBON 1K
RY301	1-515-519-00	RELAY
S301	1-554-338-00	SWITCH, LEVER SLIDE (MONITOR)
S303	1-571-092-11	SWITCH, PUSH (4 KEY)(DOLBY NR/MPX FILTER)
S701	1-554-303-21	SWITCH, KEY BOARD (■)
S702	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S703	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S704	1-554-303-21	SWITCH, KEY BOARD (REC●)
S705	1-554-303-21	SWITCH, KEY BOARD (▶)
S706	1-554-303-21	SWITCH, KEY BOARD (PAUSE■■)
S707	1-554-303-21	SWITCH, KEY BOARD (REC MUTE●)
S708	1-554-303-21	SWITCH, KEY BOARD (RESET)
S709	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S710	1-570-781-11	SWITCH, ROTARY (TIMER)
S801	⚠1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY)
S802	⚠1-570-307-11	(E)....SWITCH, VOLTAGE CHANGE
S1001	1-554-205-00	SWITCH, PUSH (ERASE PREVENTION)
S1002	1-554-205-00	SWITCH, PUSH (CASSETTE HALF DETECT)
S1003	1-554-205-00	SWITCH, PUSH (HOLDER LOCK DETECT)
S1004	1-554-205-00	SWITCH, PUSH (METAL)
S1005	1-554-205-00	SWITCH, PUSH (CrO2)
TH301	1-800-200-00	THERMISTOR S-3K
TH302	1-202-856-00	SOLID 22 1/4W F
X701	1-567-160-00	OSCILLATOR, CERAMIC
X702	1-527-532-00	(US,Canadian)...OSCILLATOR, CERAMIC
X703	1-567-731-11	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-551-734-11	CORD, CONNECTION (RK-74A)
3-318-668-01	CUSHION
3-318-671-01	(US,Canadian,AEP,G-AEP,UK) ...INDIVIDUAL CARTON
3-318-671-11	(E)....INDIVIDUAL CARTON
3-701-630-00	BAG, POLYETHYLENE
*3-710-964-01	SHEET, PROTECTION
3-769-165-11	MANUAL, INSTRUCTION
3-769-165-41	(AEP,G-AEP)...MANUAL, INSTRUCTION
3-793-481-13	INSTRUCTION
3-703-450-01	(US)....INSTRUCTION

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

TROUBLESHOOTING

The following checks will help you correct the most common problems encountered with cassette decks. Should the problem persist after you have made these checks, consult your nearest Sony service facility.
Before proceeding, first check these basic points:
- The power cord is firmly connected.
- Amplifier connections are properly established.
- Heads, capstans, pinch rollers are clean.
- Amplifier controls and switches are set correctly.

	Symptom	Cause	Remedy
General operation	Function buttons do not activate.	Button pressed immediately after power was turned on (during 3-seconds standby interval).	Wait until blinking of ▮▮ indicator stops.
		Cassette holder is not fully closed.	Close the holder completely.
		Cassette is not properly inserted.	Insert cassette correctly.
	Recording or playback starts when power is turned on.	TIMER switch is set to REC or PLAY.	Set TIMER switch to OFF when timer function is not to be used.
	● button does not activate.	Tab of cassette is removed.	Cover the slot with adhesive tape.
Tape transport	Tape does not run.	▮▮ button is pressed.	Press ▮▮ once more to release pause mode.
	Loud transport noise is heard during rewind or fast-forward.	This depends on the cassette used and is not a problem.	——
	Tape stops before being fully rewound.	COUNTER MEMORY button set to ON.	Press button once more to set the memory function to OFF.
		Cassette shell is deformed or defect.	——
Recording and playback	Recording or playback not possible.	MONITOR switch is set to SOURCE during playback.	Set switch to TAPE.
		Heads are dirty.	Clean heads.
		Connections are not made properly.	Establish correct connections.
		Amplifier switches are not set properly.	Set amplifier controls to appropriate positions.
	Sound level is low or unstable, dropouts occur.	Heads, capstans, pinch rollers are dirty.	Clean these parts.
	Increased noise or poor reproduction of high frequencies.	Heads are magnetized.	Demagnetize heads.
	Incomplete erasure.	Erase head is dirty.	Clean erase head.
	Improper sound balance.	DOLBY NR switches not set to the correct position.	Select same positions for recording and playback.
		BIAS or REC LEVEL CALIBRATION controls not adjusted correctly.	Perform calibration before recording
Noise	Hum noise is heard.	Unit is placed too close to a power amplifier.	Move the unit away from the power amplifier.

9-952-817-11

Sony Corporation
Audio Group

English
87G0598-1
Printed in Japan
© 1987. 7